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ABSTRACT

A study is reported which focused on career formation including ways in which perceptions and expectations are modified by changing economic and social conditions. Chapter 2 overviews the twenty-three tables in this report which highlight results of analysis of data from two Institute for Demographic and Economic Studies, Inc. surveys and the American College Testing Program base-year survey. The next four chapters discuss findings related to (1) labor market and educational experiences, (2) perceptions of career and training opportunities, (3) future earnings expectations, and (4) marital and fertility decisions. Chapter 3 discusses tables examining how respondents found their first jobs, likelihood of year-round employment, level of earnings, and job satisfaction. Tables in chapter 4 focus on sources of information on schooling programs, financing schooling, amount of investment, and benefits from these investments in the labor market/occupational goals. Chapter 5 examines determinants of earning expectations and career goals and patterns of changes in these plans. Tables in chapter 6 examine impact of labor force participation of women's mothers on these decisions: and interaction between fertility plans and women's decisions about careers. Chapter 7 makes suggestions for future research. (YLB)

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PERCEPTIONS, EXPECTATIONS AND CAREER FORMATION

Final Report

July 1980

by

Anne L. Jacobson
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Ø.1 INTRODUCTION

Individuals make career decisions based on their past experiences, their current options, and their expectations about the future. Given the complexity of educational, career, and other life cycle (such as marriage and fertility) choices, it might appear at first glance that individuals must sift through a mass of information about potential opportunities, much of it highly uncertain, to arrive at their decisions. In reality, individual decisions are highly constrained, so that complex choices are reduced to a small set of feasible options and likely outcomes. Social factors (including family background) and economic forces (including government policies and labor market characteristics) influence both perceptions regarding the spectrum of available opportunities and expectations concerning the probable results of career and related decisions.

This study focuses on the process of career formation, including the ways in which perceptions and expectations are modified by changing economic and social conditions. The interrelationships of career choices (such as investments in schooling, occupational paths, and long-run labor force participation plans) with actual and expected marital and fertility decisions are analyzed. This analysis is critical at the present time, when the perceived roles of women as homemakers and labor force participants are changing.

Past researchers who have examined schooling decisions in the context of fertility and labor force participation plans have limited their analyses by treating fertility, schooling, or noncontinuous labor force

participation as exogenous factors. Economists (such as Zellner (1975), Cain and Dooley (1976), and Corcoran and Duncan (1979)) have studied the impact of noncontinuous work patterns on women's earnings, where fertility is a primary but exogenous determinant of labor force participation.(1) Labor supply differences between men and women are often used in the discrimination literature as exogenous explanatory factors for the wage gap between earners, and education is also used exogenously. The results of this study indicate that causality may operate in both directions. Specifically, labor supply plans and fertility decisions are jointly determined with educational and occupational choices.

This study highlights the important factors at various stages of the career formation process. Background factors play a pivotal role, especially in the determination of schooling choices, but also in the amount and quality of labor market information available to these young people. Increasing information about labor market and schooling options is shown to alter individuals' educational, income, and occupational perceptions and expectations. The relationships between life cycle choices and perceptions and expectations are described in detail.

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(1) Harriet Zellner, "The Determinants of Occupational Segregation," in Cynthia B. Lloyd, ed., Sex, Discrimination, and the Division of Labor (New York: Columbia University Press, 1975), pp. 125-45; Glen G. Cain and Martin D. Dooley, "Estimation of a Model of Labor Supply, Fertility, and Wages of Married Women," Journal of Political Economy (August 1976), pp. S179-99; and Mary Corcoran and Greg J. Duncan, "Work History, Labor Force Attachment, and Earnings Differences Between the Races and Sexes," Journal of Human Resources (Winter 1979), pp. 1-20.

0.2 OVERVIEW OF THE TABLES

The two IDES surveys and the base-year survey conducted by the American College Testing Program provide measures of individual aptitude and achievement, family and other background information, detailed schooling and work histories, and a wealth of information on career perceptions and expectations. The twenty-three tables in this report highlight some of the more notable results of our analysis of these data. The discussion focuses on the early labor market and educational experiences of the sample, their perceptions of career and training opportunities, their future earnings expectations, and their marital and fertility decisions. Changes in the respondents' career, educational, and personal goals are extensively examined.

Because many of the variable definitions (for example, the distinction between high and low ability individuals) are discretionary, and because many of the survey questions involve speculating on attitudes and future events (responses to such questions may be highly variable, depending on the respondent's current situation), the tables should not be regarded as rigorous statistical tests of a highly structured model of background factors, experiences, and plans.(2) Rather, they constitute a descriptive compendium that is suggestive of the processes by which expectations are molded and modified.

Although the total sample for the second IDES survey comprised 3,615 individuals, the tables and discussion in this report apply to only the 3,237 white respondents. There are very few nonwhites (378) in

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(2) Appendix A contains complete variable definitions for all of the tables.

the sample, and when this total is broken down by sex and other characteristics, the numbers are too small to enable us to come to any definitive conclusions.(3)

A number of general trends in the career development, educational decisions, and future plans of these young people are illuminated by the tables; these results are discussed in detail in the next several sections of the report. The socioeconomic status of their parents is shown to be an important influence on the amount of schooling and labor market information available to youths, on their ability to afford and their likelihood of attending college, on their educational aspirations, and on their occupational goals. Ability seems to play a primary role in educational financing, attainment, and aspirations, as well as being a significant determinant of occupational goals and labor force participation plans. The longitudinal nature of these data allows us to study changes in future plans, and it appears that youths are very likely to change their income, educational, and career goals as their information

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(3) Although the potential total sample for the tables is theoretically 3,237 (the number of white respondents to the 1978 Survey), the actual sample sizes vary widely from table to table and never exceed 3,044. In part, this is because certain of the tables are based on dependent questions, that is, questions that are supposed to be skipped by individuals who give particular responses to preceding questions. These "legitimate skips" limit the maximum sample sizes of a number of tables. In addition, a variety of invalid question responses--such as missing, out of range, or multiple answers--must be eliminated before the tables can be constructed. Although invalid responses rarely account for a significant proportion of answers, most questions do have some invalid responses (most frequently, missing responses, or "illegitimate skips"). This also constrains sample sizes. Further, some of the tables examine only certain groups of respondents (such as women). Because most of the tables are derived from answers to a number of questions in both surveys, the number of respondents giving valid answers to all of the relevant questions for a specific table is always less than 3,237.

about the labor market and available opportunities improves.

The different patterns that emerge for the men and women in this sample are worthy of note. In terms of current schooling levels, educational aspirations, and the tendency to revise expected education and income levels, men and women appear very similar. However, men's occupational goals are considerably higher than women's, and more than twice as many men as women plan to be continuous full-time labor force participants.

The tables emphasize the importance of disaggregating large samples when examining expectations and life cycle choices. Women's marital status has a significant impact on their current decisions and future plans. The educational attainment and aspirations, occupational goals, and expected labor force attachment of single women are generally closer to men's than to those of other female marital status groups. However, although marriage seems to be an immediate deterrent to future schooling and work plans, women who have been married for several years exhibit a tendency to raise their goals.

Finally, the fertility decisions, educational plans, and expected long-term labor market association of women are strongly influenced by their mothers' work patterns and by their husbands' income and schooling levels. Because the majority of the women in the sample are not yet married, although most of them plan to marry, we would expect their plans to change substantially within the next few years.

Throughout the tables, we notice the effects of the external environment on the schooling and career experiences and expectations of youths. The improvement in general economic conditions during the period and the changing labor market opportunities for young people, particularly for the highly educated, are important in shaping perceptions of career opportunities and decisions about schooling and work. Furthermore, changing social attitudes--for example, society's increasing acceptance of working mothers--seem to significantly affect young women's fertility plans and educational and occupational goals.

0.3 LABOR MARKET EXPERIENCES

In March 1976, when the first IDES Survey was conducted, more than 60 percent of the respondents were employed; by the time of the second IDES Survey in November 1978, 75 percent were working. Work will be the primary activity of most of the respondents during the greater part of their adult lives, and as such it is a major focus of this study. The employment decisions and career development of youth are strongly affected by their early labor market experiences. The tables discussed in this section examine how the respondents found their first jobs, how likely they were to work year-round, the level of their earnings, and their satisfaction with their employment.

Sources of information about job opportunities can be categorized as informal (such as references from parents, other relatives, friends, or coworkers) or formal (including newspaper advertisements, public or private employment services, schools, and union hiring halls). Table 1 shows the proportions of the currently employed who had found their jobs using only informal sources, for 1976 and 1978.

Evidently, formal channels of obtaining employment are not extensively used by young people - the proportions using only informal sources range from 57 percent to 72 percent in 1976, and from 45 percent to 60 percent in 1978. However, the exclusive use of informal channels decreases markedly over the two-year period. As they gain in labor market experience and maturity, the respondents become increasingly knowledgable about employers and the job search process and increasingly aware that the structured, formal channels of employment probably effect

Table 1. PROPORTIONAL USE OF INFORMAL SOURCES OF INFORMATION ABOUT CURRENT JOB OR SCHOOLING PROGRAM, BY PARENTS' INCOME AND SEX, 1976 and 1978

	Percent finding current job or schooling program solely through informal sources[1]			
	Job		College or Training program	
Characteristics	1976	1978	1976	1978
TOTAL	64.3	50.2	72.3	49.8
High parents' income[2]	66.1	48.2	72.3	49.9
Men	71.8	51.7	72.1	47.9
Women	61.0	45.3	72.5	52.6
Low parents' income[2]	62.1	52.7	72.2	49.7
Men	68.0	59.6	67.7	50.3
Women	56.9	46.6	77.9	49.0

[1]For the current job, informal sources are parents, other relatives, friends, and previous job; for college or training programs, informal sources are parents, other relatives, and friends. These questions were answered by only those currently employed (job) or currently enrolled (schooling program) in the respective survey years.

[2]See definitions of parents' income groups in Appendix A.

a better match of applicants with positions and therefore lead to improved performance and satisfaction on the job. In addition, formal channels of employment are particularly important for occupations that require more experience or training, or are more highly skilled. Jobs in unskilled and semiskilled occupations (and many entry-level positions) are more likely to be found through informal sources, because it is difficult for employers of unskilled workers to differentiate between applicants when making hiring decisions, and informal channels (for example, current employees) represent the most reliable and informative ources of information to employers.(4) Furthermore, the marginal costs to employers of using formal channels far exceed the marginal benefits when there is a large pool of unskilled labor available. As this group of young adults moves up the occupational ladder, their use of formal sources increases.

The variation across parents' income groups in the use of informal sources is not large (four percentage points). It is interesting to note how the relationship shifts over time: in 1976, individuals from high income families are more likely to concentrate their job search in informal channels, while the reverse is true in 1978. A number of conflicting forces may be operating here. In general, youths from low income backgrounds are more likely to enter blue collar career occupations, where informal channels are more important. It might be expected that individuals with high parents' income would be more knowledgable

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(4) Doeringer and Piore discuss the benefits and the limitations of relying upon informal recruitment channels. See Peter B. Doeringer and Michael J. Piore, Internal Labor Markets and Manpower Analysis (Lexington, Mass.: D.C. Heath and Company, 1971).

about formal channels of employment--their parents are generally better educated and more likely to be employed in skilled occupations, they are more likely to have had exposure to the newspapers and magazines in which jobs are advertised, and so on. At the same time, however, they have more contact through their parents with potential employers. Young people's first jobs are often arranged by their parents because they have not yet established their own connections. Wealthier parents have more and better connections with employers. In addition, youths from high income families are more likely to go on to college. In 1976, when many of this group are in school, informal contacts through their parents are most important in finding jobs, but in 1978 many have graduated from college, and finding jobs that require a college degree is a more formal process. For both students and nonstudents, formal channels are less likely to pay off for less experienced youth - in finding the first job, it is most important to get a foot in the door, and the contacts of higher income parents provide a sort of credential. Once these youths are working and have had some experience, their greater exposure to formal channels (as mentioned above) becomes more useful.

Men and women differ substantially in the extent of their reliance on informal channels of employment. Men are consistently more likely than women to use only informal sources, particularly among persons from low income households. This may indicate that women have limited access to the "old boy" networks that men have established, and that this disparity is related to social status. In addition, the types of jobs that women enter may be less dependent on old boy networks. Women may tend to go into occupations similar to those that their mothers have held,

and because their mothers are less likely than their fathers to be presently working, a possible informal source is removed. Furthermore, parents may feel that it is more important that their sons find good jobs and may therefore save their contacts with employers to help their male offspring.

The number of weeks worked by the respondents in the year preceding the 1978 survey are indicated in Table 2. The averages for the various respondent groups range between 37 and 49 weeks. These totals are probably biased downward for the majority of the employed respondents, particularly for the more than high school groups, because the table ncludes persons who were enrolled during the period and were therefore more likely to work less than a full year. Considering this, the overall average of 40.4 weeks indicates that most of the employed who are not enrolled are full-year workers. The survey responses indicate that more than 70 percent of the respondents who were working in 1978 (again, including those who were students) usually worked at least 36 hours per week. Apparently, most of the respondents who were employed and not enrolled were full-time, full-year workers.

The number of weeks worked varies inversely with ability, presumably because more individuals of high ability are enrolled in school (the potential rewards to further education are higher for this group). Similarly, the less educated work more weeks than the highly educated, regardless of ability group-- many of the individuals who have continued in school beyond high school are currently enrolled.

Table 2. AVERAGE NUMBER OF WEEKS WORKED IN 1978, BY ABILITY, SCHOOLING LEVEL, AND SEX

Characteristics	Number	Weeks Worked
TOTAL	2,675	40.4
High ability[1]	1,510	38.4
More than high school	1,312	37.5
Men	581	37.0
Women	731	37.8
High school graduate or less	198	44.5
Men	84	44.4
Women	114	44.5
Low ability[1]	1,165	43.0
More than high school	720	41.2
Men	321	41.5
Women	399	41.0
High school graduate or less	445	45.9
Men	209	49.1
Women	236	43.0

[1]See definitions of ability groups in Appendix A.

The levels of weeks worked are very similar for men and women, except in the low ability, high school graduate or less category. In this group, men work an average of six weeks more than women (for a total of 49.1 weeks per year, the highest level observed). Because no members of this group are enrolled, this relationship is probably closest to what would be seen if students were excluded from the table. Men generally have a stronger attachment to the labor force and a greater commitment to their careers, so one would expect that they would be more likely to work for the full year. Many women leave the labor force or work only intermittently when they are married and raising children.

The average annual earnings figures for 1975 and 1978, exhibited in Table 3, suffer from a similar downward bias. Although persons who were enrolled in school at the time the surveys were conducted are excluded from the table, respondents who were enrolled at some time during the years to which the income figures pertain are included in the sample. Since three-quarters of the sample had attended some school or training program after graduating from secondary school (and 98 percent of the respondents completed high school), the income figures are probably significantly affected (particularly for 1976).

This possibility is supported by the observation that average earnings decline with schooling level: persons with high school educations earn the most, followed by those with noncollegiate postsecondary training, while the earnings of individuals with at least some college are significantly lower. This last group was almost certainly in school during 1975, and many of them were also enrolled at some time in 1978;

Table 3. AVERAGE EARNINGS IN GOOD AND BAD LABOR MARKETS OF RESPONDENTS NOT ENROLLED IN SCHOOL, BY SCHOOLING LEVEL AND SEX, 1976 and 1978

Characteristics	Average pretax wage and salary income in: 1975[1] Good labor market[3]	1975[1] Bad labor market[3]	1978[2] Good labor market[3]	1978[2] Bad labor market[3]
TOTAL	$4,951	$4,169	$ 8,378	$ 7,339
High school education or less	5,529	4,710	9,477	8,125
Men	6,536	5,587	11,521	10,555
Women	4,243	3,984	6,877	5,963
Noncollegiate postsecondary training	4,535	4,126	9,262	7,993
Men	5,708	4,959	10,970	10,028
Women	3,562	3,543	7,456	6,791
At least some college	3,235	2,373	7,165	6,501
Men	3,974	2,532	8,877	8,154
Women	2,497	2,236	5,913	5,456

[1]Income in 1975 is calculated for only those individuals not enrolled in school at the time of the 1976 Survey.

[2]Income in 1978 is calculated for only those individuals not enrolled in school at the time of the 1978 Survey.

[3]See definitions of good and bad labor markets in Appendix A. These designations correspond to the 1975 unemployment rates for the SMSAs in which the respondents resided in 1973, at the time of the first ACT Survey.

therefore, they worked fewer weeks. Respondents with high school diplomas or less were probably not in school in either year, but it is especially unlikely that they were enrolled in 1978.

Educational attainment seems to be an important influence on the change in income between 1975 and 1978. The proportional increase in earnings over this three-year period is largest for the most educated and lowest for the least educated, which indicates that some of the individuals at higher schooling levels may have left school during the interval between the surveys and therefore worked more steadily during 1978. However, the negative correlation between earnings and education is still present in the second survey. In addition to the explanation advanced above, this may result from the greater labor market experience of the less educated. At this early stage in their careers, job experience and on-the-job training may pay off more than formal schooling. Accordingly, those individuals who entered the labor force after high school graduation might earn more than members of their age group who spent several years in school before finding employment and therefore have less labor market experience. Later in the life cycle, the pattern probably reverses, as the earnings of persons with more education rise more steeply.(5) The declining differential between educational groups over time might indicate that this process is at work.

Women consistently earn less than men, even when schooling level and local labor market variations are taken into account. This result has been documented in numerous studies of various age and educational

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(5) See, for example, Jacob Mincer, Schooling, Experience, and Earnings (New York: National Bureau of Economic Research, 1974), chapter 4.

groups. The reasons behind this relationship include the greater likelihood that women will leave the labor force or have intermittent work histories, as well as employer discrimination. The interruption of women's careers means that at any given age, married women on average have less labor force experience and lower investments in on-the-job training than men. Therefore their earnings are lower. Further, young women with strong prospective labor force attachment might be more willing than young men to accept low initial wages as the price to pay for a job providing training and thereby promising higher lifetime earnings (their wages would increase along with their experience and capabilities).

Because of recent changes in equal-pay and equal-employment opportunity legislation, one would expect the earnings gap to narrow over time. On the national level, this seems to be the case. For example, looking at year-round, full-time workers, women age 20 to 24 earned $6,598 in 1975, compared with $8,521 for men of the same age group; in 1978, women earned $8,116 and men $10,410.(6) Although three years is not a sufficiently long period to draw conclusions about secular trends, a slight narrowing is observed. Similarly, for this sample, the differential seems to be shrinking over time in the good labor markets.

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(6) U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-60, No. 105, "Money Income in 1975 of Families and Persons in the United States," (Washington, D.C.: Government Printing Office, 1977), table 6, pp. 21-22; and U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-60, No. 120, "Money Income and Poverty Status of Families and Persons in the United States: 1978 (Advance Report)," (Washington, D.C.: Government Printing Office, 1979), table 9, pp. 18-19.

In the bad labor markets, however, the difference by sex seems more pronounced in 1978. Unemployment rates were decreasing over the period (between 1975 and 1978, national unemployment rates for 20- to 24-year-olds fell from 13.2 to 7.6 for white men and from 11.2 to 8.3 for white women), so this result is surprising.(7) An explanation may lie in the fact that women, who are generally less attached to the labor force, may tend to work shorter hours in bad labor markets, so that a fall in earnings because of poor economic conditions (such as was experienced in 1975) may be less severe for them than for women in good labor markets who work more hours. Therefore, the improved economic conditons in 1978 would particularly lift the earnings of women in good labor markets. Similarly, because men work full-time even in bad labor markets, their earnings will rise more when conditons improve. The distinction between good and bad labor markets derives from observed unemployment rates in 1975, when the economy was in a cyclical trough. The bad labor markets, which had the highest unemployment rates, are obviously very cyclically sensitive. When things turn up, the bad labor markets will particularly benefit, and men will receive the greater earnings gain because they tend to work more.

For both men and women at all schooling levels, incomes are lower in the bad labor markets than in the good labor markets. However, the differentials between good and bad labor markets are generally smaller in the later year for men. This probably refects the general improvement in economic conditions. The differential particularly narrows for

(7) U.S. Department of Labor, Employment and Training Administration, Employment and Training Report of the President (Washington, D.C.: Government Printing Office, 1979), table A-21, p. 268.

the highly educated, whose earnings are less responsive to economic conditions. In addition, the "good" and "bad" labor market designations are less reliable in 1978, because they refer to 1975 unemployment rates for the respondents' residence in high school. Relative local conditions have probably changed by 1978; furthermore, many respondents (particularly the better educated) may have moved to a different SMSA.

Table 4 displays the respondents' evaluations of their current or most recent jobs in 1978. Generally, employees had definite feelings about their work—less than one percent were indifferent. Overall, the majority said their job was "good" and most of the others replied that it was "fair"; less than seven percent reported being genuinely dissatisfied. Women tend to be more positive about their positions than did men. Women's expectations about the quality of their jobs and their career paths might not be as high as men's, either because their attachment to the labor force is weaker and their goals are less centered on their careers, or because they are less likely to eventually work in highly skilled, demanding positions and therefore are less frustrated with entry level jobs.

Job satisfaction also seems to be closely related to the number of weeks worked during the year. For both men and women, the proportion giving their jobs the highest rating increases as the number of weeks worked increases, while the proportion rating their jobs "poor" decreases as weeks worked increase. The "fair" responses fluctuate to a greater extent; this response effectively represents a residual category, and the significance of these variations is more difficult to interpret.

Table 4. RESPONDENTS' EVALUATIONS OF CURRENT OR MOST RECENT JOBS, BY SEX AND NUMBER OF WEEKS WORKED, 1978

Characteristics	Number	Rating of job as a whole, 1978[1] Good (%)	Fair (%)	Poor (%)	Does not matter to me (%)
TOTAL	2,672	55.6	37.2	6.5	.7
Men	1,195	53.6	38.3	7.2	.9
Average number of weeks worked in 1978:					
1-16	131	43.5	42.0	13.7	.8
17-34	204	47.5	45.1	6.4	1.0
35-52	860	56.5	36.2	6.4	.9
Women	1,477	57.3	36.2	6.0	.5
Average number of weeks worked in 1978:					
1-16	142	55.6	33.8	9.9	.7
17-34	297	52.8	39.1	7.4	.7
35-52	1,038	58.8	35.7	5.1	.4

[1]This question was answered with reference to the current or most recent job by only those individuals who had worked during the period between the 1976 Survey and the 1978 Survey.

The relationship between amount of time worked and attitude toward the job operates in two directions. Individuals may work more weeks because they are happy with their jobs. Certainly among women, who are generally less committed to their careers, one would expect to see very little evidence of job dissatisfaction for full-year employees, because unhappy workers are more likely to leave the labor force or at least the particular position. On the other hand, the more interesting and challenging positions may be more likely to offer full-year or permanent employment. These attributes are generally associated with job security and other positive job features. Thus, weeks worked may add to the quality of the job, and individuals may have a more positive attitude toward a longer-term position because they have a greater identification with it.

It is also possible that respondents working fewer weeks are college students, who work during the summer or intermittently during the year. Because students are available only for limited periods, the jobs that they find may not be as satisfying as if they could work for the full year. In addition, students may be more apt than less educated workers to be frustrated with these jobs, because they fall short of the type of positions that they envision as permanent occupations, or because they do not fully utilize their abilities or skills.

0.4 SCHOOLING AND CAREER CHOICES

Since graduating from high school, about 25 percent of the respondents have never enrolled in a school or training program, 20 percent have received some vocational or technical training, 25 percent have attended some college, and 28 percent have earned four-year college degrees. Formal schooling represents one of the most important human capital investments made by young people. To enable us to examine the schooling decisions made by this sample, the extent to which these choices are influenced by future plans, and the constraints that are important in determining and modifying these choices, the tables discussed in this section focus on where students get information on schooling programs, how they finance their investments in schooling, how much they decide to invest in schooling, and how they plan to benefit from these investments in the labor market, in terms of occupational goals.

Table 1 (on page 7a) provides information on how students first found out about their college or training program. A very high proportion (almost three-quarters) of the respondents used only informal sources of information in 1976 (significantly higher than the level for jobs), but by 1978, less than half of the students have exclusively used informal sources to find out about their schooling programs (slightly less than for jobs). New high school graduates are much more likely to rely on the judgement and recommendations of parents and peers than to go through more formal sources. With age and maturity, as well as some first-hand knowledge about available options, these youths have more information and are more aware of formal channels, such as placement officers, guidance counselors, teachers, or recruiters. In addition,

their schooling goals may be more specific and they may be more likely to be targeted toward particular types of programs in the later year; therefore, parents and friends are less likely to be able to provide useful information.

Parents' income does not seem to significantly affect the way in which young people gain information on schooling programs. Persons from high income families are only slightly more likely to use only informal sources, probably because their parents are better educated and are able to provide more guidance. Although proportional use of informal sources varies more by sex, the differences are generally not large. Women tend to use informal sources more than men, particularly in 1976, although this pattern does not hold true across the board.(8) The most striking result is the ten percentage point difference between men and women with low parents' income. Women of this group rely on informal sources to a much greater extent than the average, while men's use of informal sources is significantly less than the average. Part of the reason for this may be the small sample sizes in both years. However, a further explanation might be that women are less likely than men to attend non-collegiate training programs, and if they do attend they may choose less technical programs (such as secretarial schools), for which formal sources are less important. This might be a particularly strong factor for low income individuals, among whom noncollegiate training may be more prevalent.

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(8) A possible explanation for this might be that men are more likely to be directed toward specialized fields or narrow occupational goals; information about institutions offering these programs of study may not be easily accessible.

In Table 5, the proportion of schooling costs covered by various sources of payment in 1976 and 1978 is exhibited for men and women of different ability levels and family backgrounds, while Table 6 focuses on women and variations by marital status. Both tables refer only to college attenders. Three categories of payment (support from parents, loans, and scholarships or grants) are highlighted here. Together, these account for between 50 and 60 percent of total schooling costs. The sources that are not examined include own savings and earnings, support from spouses, other relatives, and friends, social security benefits, and employer contributions.

Parents' contributions are by far the most important of the three sources, covering on average almost half of schooling costs in 1976 and more than one-third in 1978. Scholarships pay for about ten percent of costs on average, loans for four to seven percent. Of the three, only loans tended to increase over time as a source of educational financing.

Parental support does not vary greatly with the ability of the student. In 1976, high ability individuals as a group receive a slightly higher proportion of educational funds from their parents, presumably because the parents perceive that the returns to schooling will be highest for high ability youths, and therefore the investment is more worthwhile.

The most important determinant of the magnitude of parental support is ability to pay. Families differ in their access to capital, and those with the easiest access will invest most in schooling. Thus, we observe that parents' contributions were greatest for students from high income backgrounds and lowest for students from low income families,

Table 5. SELECTED SOURCES OF PAYMENT FOR EDUCATIONAL COSTS AND APPARENT DISCREPANCIES BETWEEN COSTS AND PAYMENTS, RESPONDENTS WHO HAVE ATTENDED COLLEGE, 1976 AND 1978

Characteristics	Percent of schooling costs covered by: Parents' contributions 1976	Parents' contributions 1978	Loans 1976	Loans 1978	Scholarships 1976	Scholarships 1978	Percent of respondents seeming:[1] 1976 Underfunded	1976 Reasonably funded	1976 Overfunded	1978 Underfunded	1978 Reasonably funded	1978 Overfunded
TOTAL	44.7	35.2	4.2	6.8	11.6	9.9	20.8	55.6	23.6	19.0	60.8	20.2
High ability[2]	45.4	34.9	4.3	6.6	12.4	10.1	18.4	59.8	21.8	18.2	62.6	19.2
High parents' income[2]	55.2	43.3	2.8	5.7	7.5	7.3	17.0	65.6	17.4	17.7	65.1	17.2
Men	54.1	40.2	2.3	5.0	6.5	6.4	11.5	70.0	18.5	15.4	68.2	16.4
Women	56.1	46.0	3.3	6.4	8.4	8.2	21.8	61.8	16.4	19.7	65.1	17.2
Low parents' income[2]	27.1	19.1	7.1	8.4	21.7	15.6	21.1	48.8	30.1	19.3	57.6	23.1
Men	25.9	17.0	7.1	9.0	21.4	15.5	20.2	51.1	28.7	19.1	54.8	26.1
Women	28.2	21.1	7.0	8.0	22.0	15.7	21.9	46.8	31.3	19.5	60.4	20.1
Low ability[2]	42.6	36.2	3.8	7.3	9.3	9.3	27.7	43.9	28.4	21.5	55.4	23.1
High parents' income[2]	56.4	43.4	2.4	5.6	4.9	4.6	24.1	50.5	25.4	22.8	57.6	19.6
Men	54.5	37.6	3.4	6.5	4.5	6.1	24.3	49.6	26.1	26.9	52.7	20.4
Women	58.2	49.4	1.5	4.7	5.2	3.1	23.9	51.3	24.8	18.7	62.6	18.7
Low parents' income[2]	24.0	26.5	5.7	9.7	15.5	15.9	32.5	35.0	32.5	19.7	52.3	28.0
Men	24.5	25.5	5.6	8.3	14.8	15.9	33.8	36.3	29.9	22.4	53.5	24.1
Women	23.6	27.3	5.7	10.8	16.2	15.9	31.4	33.7	34.9	17.6	51.3	31.1

[1]The funding variables are calculated on the basis of total schooling costs and total payments from all sources (the respondents were directed to write in the appropriate amounts). When the costs were equal to payments, or within a 10-percent range, respondents were designated "Reasonably funded"; when costs were more than 5 percent greater than payments, "Underfunded"; when costs were more than 5 percent less than payments, "Overfunded".

[2]See definitions of ability and parents' income groups in Appendix A.

Table 6. SELECTED SOURCES OF PAYMENT FOR EDUCATIONAL COSTS, FOR WOMEN WHO HAVE ATTENDED COLLEGE, 1976 AND 1978

Characteristics	Percent of schooling costs covered by: Parents' contributions 1976	Parents' contributions 1978	Loans 1976	Loans 1978	Scholarships 1976	Scholarships 1978
TOTAL	45.7	38.1	4.3	6.9	12.3	10.2
High ability[1]	46.5	37.6	4.6	6.9	13.1	10.7
High parents' income[1]	56.1	46.0	3.3	6.4	8.4	8.2
Married, both surveys	31.6	15.6	1.2	4.9	24.9	9.2
Married, 1978 only	47.7	41.9	4.6	5.7	7.8	9.9
Not married, 1978	59.5	48.5	3.1	6.6	7.7	7.7
Low parents' income[1]	28.2	21.1	7.0	8.0	22.0	15.7
Married, both surveys	16.7	7.8	1.3	7.6	22.2	5.0
Married, 1978 only	28.4	29.6	2.8	5.0	24.0	18.7
Not married, 1978	29.6	19.8	8.9	8.8	21.4	15.7
Low ability[1]	43.2	39.4	3.4	7.1	10.1	8.8
High parents' income[1]	57.9	49.4	1.5	4.7	5.3	3.1
Married, both surveys	40.8	10.0	0.0	0.0	4.5	0.0
Married, 1978 only	58.4	46.3	3.7	3.4	10.1	1.5
Not married, 1978	58.7	51.9	.7	5.2	3.4	3.8
Low parents' income[1]	24.2	27.2	5.9	10.2	16.6	16.0
Married, both surveys	20.2	24.7	0.0	0.0	24.6	6.3
Married, 1978 only	22.3	26.4	11.2	3.6	10.6	15.1
Not married, 1978	25.1	27.5	4.7	12.5	17.9	16.7

[1]See definitions of ability and parents' income groups in Appendix A.

regardless of the student's ability. This relationship held true over time. However, the level of parental support generally fell between 1976 and 1978. The tendency for parental support to erode with age is not surprising—as students grow older, they are naturally expected to take more financial responsibility for their own educations. Some of the respondents have married or in other ways become physically, emotionally, or financially independent of their parents during the intervening period. Parents of respondents with younger siblings may have additional educational bills to pay by 1978, and therefore be unable to cover as large a portion of costs.(9) In addition, rising schooling costs and inflation may be eroding the parents' ability to pay.

High income parents decreased their contributions more severely over the two-year period than did low income parents, so that the differential between income classes narrowed. This can be explained if schooling costs are thought of as having two components: the fixed, necessary costs (tuition and fees) and additional, variable costs (room and board, books, transportation, entertainment). As the level of parental support generally decreases, these residual payments will be the first to fall off, and the largest decline will probably be seen among those who cover the largest portion of residuals (high income parents). Parents' contributions actually increase slightly for low ability, low income students. Many of this group may have been attending community colleges in 1976 and commuting from home, so that the costs of meals and lodging were not a factor in the earlier year. Those who

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(9) Of course, parents of respondents with older siblings (who are now out of college or farther along in their educations) may be able to pay a higher proportion of the respondents' schooling costs in 1978.

decided to continue in school may have been forced to move away from home to enter four-year schools; as their costs rose substantially, their parents may have covered some of the additional living expenses.

Controlling for ability and parents' income, women generally receive a higher parental contribution than men. Parents may feel particularly strongly that men should cover part of their schooling costs from other sources (such as own earnings), or men may be more likely to be independent of their parents. Because men's wages are generally higher than women's, men may be able to finance a larger portion of their educations from their own resources. Men also are more likely than women to work while enrolled. Finally, it may be easier for men than for women to obtain funds from other sources (employer contributions, the GI Bill, and so on). The difference in the levels of parental support for men and women increases over time, because support for men falls off more sharply. If parents decrease their contributions as their expectations that a youth will work rise, contributions to men will decline more quickly, for reasons cited above.

Looking at Table 6, we can get more information on the determinants of parental support for women. Marital status seems to be closely related to the amount of educational financing provided by parents. In each ability and income group, the highest proportion of costs covered by parents is for not married women. (The not married 1978 group, which includes close to two-thirds of the sample, is for all intents and purposes a "never marred" category, because less than three percent of the total sample had ever been separated, divorced, or widowed.) Single

women are more likely than married women to still be financially dependent on their parents, so this result is not surprising. Similarly, the lowest level of parental support is observed for women who have been married longest, and parents' contributions to this group dropped most sharply between 1976 and 1978. Whatever the reasons behind the general decline in parents' contributions, it would be expected that parents would be most likely to decrease the amount of financing provided to married children. In addition to expecting married children to be independent, parents may feel that the returns to schooling investments will be lower for these women, because of the relationship between marital status and labor force participation. As the length of time married increases, the parents are more apt to believe that the child and his or her spouse should be able to pay for all or most of schooling costs.

Of the three sources of payment shown, loans represent the smallest factor in paying for schooling costs, in both years. However, the overall proportion of costs paid for by loans in the student's name increased substantially— by more than 50 percent—over the period. This rise may reflect greater need for funds, particularly because parents' contributions and scholarships were falling. In the later year, students may have more or better information about available options for financing higher education, simply through spending time in school and becoming more aware of funding possibilities, or because they can get information and advice from the institutions. The schools or the loan programs may be disseminating more information about loans in 1978, and encouraging more students to participate. If the loan programs have grown during the period or modified their eligibility requirements,

loans may have become available to a larger share of the student population. Federal funds for loans to students in higher education increased from about $352 million in 1974 to $396 million in 1976, and then jumped to almost $1.2 billion in 1978.(10) Recent legislative changes that eliminate parents' income ceilings for certain loan programs may be expected to increase the percentage of schooling costs paid for by loans, particularly for students from high income families.

In 1976, loans are slightly more important for high ability students. This group is probably more likely than low ability students to attend expensive schools, so their need for loans may be greater. However, the relationship reverses by 1978. High ability students may tend to be more knowledgable about financial options in the earlier year, when they are recent college entrants. As the low ability youth spend time in school and become more informed, they are more likely to apply for loans than they were in the past.

A more important determinant than ability of the level of loans is parents' income. As might be expected, loans cover a significantly higher proportion of costs for individuals from low income backgrounds in both years. There is no consistent pattern of loan receipt across sex groups. Among marital status groups, single women generally seem to have the highest levels of loans, particularly in 1978, and to experience the largest rise in loan utilization. Because they have no husbands to supply funds, they are more dependent on other sources of pay-

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(10) National Center for Education Statistics, Digest of Education Statistics: 1979 (Washington, D.C.: Government Printing Office, 1979), table 154, pp. 166-67.

ment. Loans also rose dramatically for high ability women who were married in both 1976 and 1978. However, their 1976 levels were extremely low. Women who were married in both surveys are more likely than the other female respondents to have had children already, and it is possible be that their husbands were not earning enough to cover the costs of raising children without decreasing contributions to schooling costs. Both parents' contributions and scholarships fell significantly for this marital status group. However, none of the low ability women who had been married throughout the period used loans to finance schooling. Similarly, the proportion of costs covered by loans decreased for low ability women who were married in 1978 only but increased for high ability women in this group. As was mentioned above, high ability individuals are more likely to attend expensive schools, where loans would be an important source of financing, while more of the low ability group are enrolled in less expensive and less lengthy programs (for example, junior colleges).

The scholarship category includes a variety of programs, including federal and state grant programs and fellowships, and college scholarships and fellowships. The criteria for awarding scholarships therefore vary greatly—some are based on need, some on achievement or merit, others on some combination of the two. The overall level of scholarships decreased slightly between 1976 and 1978, although the change is not as large as that observed for either parents' contributions or loans.

Because the reasons why students receive scholarships are diffuse, the patterns of receipt and the actual levels are not easily inter-

preted. Scholarships generally accounted for a higher proportion of costs for high ability students than for low ability students, but the gap narrowed over time as scholarship levels fell for high ability youths and remained constant for individuals of low ability. The differential by ability group is not as marked as the variation by parents' income level. Students from low income families pay for a substantially higher percentage of schooling costs with scholarship funds (their scholarship levels are at least twice and as much as three times the levels for high income students). Differences between men and women are not large in either year, and no consistent pattern of change is observed.

In most cases, women who were married in 1976 and 1978 had the highest level of scholarships, but also experienced the largest relative decline over the period. Because their marital status was constant, the change in scholarship level must have had other causes. In part, this change may reflect a regression toward the mean--because this group had the highest original level of scholarship support, they were most likely to experience a decline over time. The married 1978 only women, on the other hand, experienced a significant change in status between the two surveys. Their level of scholarship support also changed substantially, but erratically - falling for some groups, rising for others. The proportion of single women's educational costs paid for by scholarships was fairly stable over time.

The overall decline in the importance of scholarship support probably stems from a number of sources. The costs of schooling are rising

over time, and if the supplies of funds to scholarship programs are not keeping pace, the proportion of costs covered would necessarily fall. Given rising educational costs and the financial situation of many colleges and universities, both schools and the government are increasingly likely to prefer making funds available through loan programs. Particularly if funds are short, grant programs would suffer. The previously mentioned changes in eligibility requirements for many loan programs, which permit access to loans for a greater number of students would reinforce this effect. In addition, if more students are applying for and receiving grants, unless available funds increase at the same rate, the average portion of costs covered will fall. A further explanation for the decreasing fraction of schooling costs paid for by scholarships and the increasing fraction paid for by loans is that inflation is boosting college costs over time, but scholarships are often fixed in nominal terms at a level determined when the student enters the program. Whatever the proportional level of scholarship support is in 1976, then, the 1978 level would be lower.

Both scholarships and parents' contributions are falling over time, while the increase in loans is not large enough (and the level of loan support is not high enough) to take up the slack. Accordingly, costs must increasingly be paid for by other sources. In particular, the student's (and spouse's) own savings and earnings will be increasingly important determinants of ability to pay for (and therefore to attend) college.

The second half of Table 5 contains funding variables that indicate how closely the respondents' estimates of total schooling costs approximate their estimates of payments from all sources. When costs were equal to payments, or within five percent in either direction, the respondent's estimates were labeled "reasonable". Outside of these limits, when estimated costs were higher than payments, respondents were categorized as "underfunded"; "overfunded" individuals seem to have more resources than were needed to cover educational costs.

On average, only between 56 and 61 percent of the college attenders were apparently reasonably funded. The rise over time is an encouraging sign--either respondents have become more aware of how their educations are financed (a hypothesis advanced in the above discussion) and therefore more accurate in their estimates, or defects in the mechanisms of educational financing that can result in a mismatch of funds and costs have been somewhat corrected by 1978, or some combination of both factors is operating.

In both years, the respondents are slightly more likely to be overfunded than to be underfunded. Examining the various stratifications more closely, this is not true of high ability college students, who also have a significantly greater tendency to give "reasonable" estimates than do low ability students. If this table is primarily measuring the accuracy of the students' information about educational costs and payments and the likelihood that they will correctly report the cost and payment figures, this result is not surprising. It is consistent with the further observation that a much higher proportion of individu-

als from high income families than from low income families give reasonable estimates.(11) Low income students are generally more likely than high income students to be underfunded. By definition, youths from low income families are less able to pay for their schooling, and those members of this group who do not receive loans or scholarships may find it difficult to raise the necessary funds. There is no consistent pattern of apparent underfunding or overfunding by sex across ability and income classes or between 1976 and 1978.

The possibility that the "overfunded" designation indicates a tendency to receive funds in excess of costs cannot be disregarded. Low income persons in both ability groups (especially the low ability) seem particularly prone to being overfunded. This might indicate that they are receiving subsidies over and above the costs of schooling, probably in the form of government loans or scholarships that include stipends for living costs. It is possible, in effect, that these students are being paid to attend college. Looking across the columns in Table 5, we

(11) The question of the accuracy of the respondents' perceptions is also addressed in Table 22, Appendix B, which indicates how responses about changes in parents' income correspond to the actual income figures given for 1976 and 1978. This table shows a general consistency between perceptions and actual changes. Among the individuals who felt that parents' income was much lower in 1978, almost half of their parents had experienced a large decline in income, while very few of their incomes actually rose substantially. Similarly, almost one-third of the parents of those who perceived a large rise did in fact have much higher incomes in 1978, and less than six percent had experienced a large decline, while the parents' incomes of the great majority of respondents who perceived no change or only a slight increase or decrease had not changed significantly. There does seem to be some tendency not to perceive a rise in parents' income when income had in fact increased greatly over the period. Of course, the responses might be colored by inflation, and individuals may be answering the question in terms of noticable changes in living standards rather than in actual incomes.

see that low income individuals do receive loans and scholarships that cover a larger proportion of schooling costs than those received by other groups. If this explanation has any validity, the overall decline in the prevalence of overfunding may mean that the problem is less common in 1978. However, it is also possible that this decline solely reflects the increasing accuracy of students' estimates, and that the probability of actually being overfunded is no lower or even higher than in 1976.

The investment in education requires a sacrifice of current consumption to increase future output. The returns to education generally include higher money and psychic incomes (education may be a consumption good as well as an investment good). Therefore, many youths have an incentive to forego higher wages in the present for learning and training opportunities that will provide benefits in the future. Tables 7 and 8 examine the relationships between ability and sex (and marital status for women) and the level of educational attainment. The schooling level categories shown are not exhaustive; certain levels have been selected to provide information about the relative popularity of collegiate and noncollegiate programs and of the tendency of early attenders to continue in school.

The overall rates of college attendance are fairly high: almost two-thirds of the respondents attended within the first two years out of high school, and about 30 percent earned a bachelor's degree by 1978. (Because almost all of the respondents graduated from high school in 1974, four consecutive years of college attendance would be required to

Table 7. PROPORTION OF RESPONDENTS ACHIEVING SELECTED LEVELS OF EDUCATIONAL ATTAINMENT, BY ABILITY AND SEX

Characteristics	Number	Had some college, 1976 (%)	Completed B.A., 1978 (%)	Had some noncollegiate postsecondary training, 1976 (%)	Completed two yea noncollegiate postsecondary training, 1978 (%)
TOTAL	3,044	63.5	28.9	6.7	7.3
High ability[1]	1,700	77.9	41.4	4.8	5.9
Men	762	78.7	40.3	4.6	5.9
Women	938	77.2	42.3	5.0	5.9
Low ability[1]	1,344	45.2	13.0	9.1	9.1
Men	593	46.4	11.6	9.4	11.0
Women	751	44.3	14.1	8.8	7.6

[1]See definitions of ability groups in Appendix A.

Table 8. PROPORTION OF ABILITY AND MARITAL STATUS GROUPS ACHIEVING SELECTED LEVELS OF EDUCATIONAL ATTAINMENT, WOMEN

Characteristics	Number	Had some college, 1976 (%)	Completed B.A., 1978 (%)	Had some noncollegiate postsecondary training, 1976 (%)	Completed two years noncollegiate postsecondary training, 1978 (%)
TOTAL	1,677	62.6	29.8	6.7	6.6
High ability[1]	936	77.2	42.3	5.0	5.8
Married, both surveys	128	43.0	9.4	7.8	2.3
Married, 1978 only	193	78.2	37.3	6.7	7.3
Not married, 1978	615	84.1	50.7	3.9	6.0
Low ability[1]	741	44.0	14.0	8.9	7.7
Married, both surveys	204	15.2	.5	6.9	3.9
Married, 1978 only	151	52.3	13.9	10.6	4.6
Not married, 1978	386	56.0	21.2	9.3	10.9

[1]See definitions of ability groups in Appendix A.

have received a B.A. by the fall of 1978.) There seems to be a high correlation between the amount of education received and ability as measured by test scores. More than three-quarters of the high ability respondents in the earlier survey had attended college and over 40 percent had completed a B.A. by 1978, compared with less than half and 13 percent of the low ability group, respectively. If youths with greater ability are more able to convert education into increased productivity (and correspondingly higher earnings), this higher rate of return will lead to a greater probability of investing. (If the most able get the most education, part of the estimated returns to education are actually returns to ability.) Similarly, of those who do attend, the higher ability students will be more likely to complete their course of training. To the degree to which high ability individuals are more likely to receive scholarships and need to spend less time studying, their costs of attendance may be lower.

This relationship between ability and educational attainment exists for both men and women, and ability is a much more important influence than sex on school attendance.(12) Within ability groups, men are slightly more likely than women to to attend college. Because women receive lower wages than men and may expect to participate less in the labor market (even controlling for ability and education), they have less incentive to make investments in their careers. If women are not planning to spend as long in the labor force, they will not be able to

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(12) An extensive discussion of the interrelationship between educational achievement and "ability" is contained in Stephen P. Dresch and Adair L. Waldenberg, Labor Market Incentives, Intellectual Competence and College Attendance (IDES Working Paper, March 15, 1978).

reap the rewards to education over the entire period from school completion to retirement, and will therefore be less likely to invest.

The marital status breakdown in Table 8 shows that, in fact, single women in 1976 (which includes the women who were married only in 1978, as well as the not married group) are even more likely than men to attend college. There are numerous job opportunities for men--mostly as skilled craftsmen, such as plumbers, carpenters, and machinists-- where youths can receive on-the-job training and move up into positions of responsibility where they can have interesting, lucrative careers without having attended formal programs of higher education. In contrast, women's traditional employment opportunities form a fairly rigid two-tiered structure, with clerical and secretarial positions on one level and professional jobs (such as teaching), which require college educations, on the other. In the past, women have not had as many opportunities in the semi-professional fields open to men.

In terms of educational investments, single women generally look more like men than married women do, because they are usually more committed to the labor force (they do not have husbands' earnings to rely on, nor do they have childcare responsibilities). Of course, these respondents are still very young, and many of the not married group are probably planning on marriage. However, it is also possible that one of the reasons why some of these women are not yet married is precisely that they are more strongly attached to the labor force or more career-oriented than some of the married women, and therefore are more likely to make schooling investments and to make these investments before getting married and taking on additional responsibilities.

The relationship between life cycle choices and educational decisions helps explain the high rates among women of completing four-year degrees in 1978. As a group, women are more likely than men to have received bachelor's degrees by 1978. As we have seen, parents' contributions to schooling costs fell particularly sharply for men between 1976 and 1978; thus, many of those men who still plan on completing at least four years of college may have been forced to leave school and work in order to finance schooling investments at a later date. Men may be more likely than women to attend part time, and thus to take longer to graduate. The high rate of college completion among women is entirely due to the continuing attendance of single women. Marriage is an obvious deterrent to higher education, and as the length of time married increases, the influence becomes stronger. In addition to the influence of marriage and childbearing on labor force participation plans, it may be that some of the married women can not afford to be in school, either because their spouses' earnings are not sufficiently high (this group had the lowest level of parental support), or because they have to work to support a husband who is enrolled. The women who were married in both surveys exhibit a very low likelihood of attending in 1976, and by 1978 only a small number have graduated from college. This is particularly true for low ability women (15 percent ever attended, and only .5 percent graduated), who, ceteris paribus, have less to gain from higher education.

School attendance is also significantly affected by marital status or those women who married between the first and second surveys. In 1976, this group was almost as likely as the not married 1978 group to

attend college. However, the proportions who had completed B.A.s by 1978 represent substantial declines from the 1976 levels. The change in marital status seems to have had a very strong impact on the educational investments of low ability women. However, many of the low ability women in this group were probably enrolled in junior college prior to their marriages. Their decisions not to go on in school probably predate the change in marital status. Thus, one can not necessarily infer from these results that marriage is causing young women to alter their plans for further schooling.

Noncollegiate postsecondary training is an option that was chosen by a much smaller proportion of the sample. Training programs generally involve a shorter time commitment than academic programs, however, and the respondents seem more likely to complete their course of study in a vocational program than in college, at least within this two-year period. In fact, a higher proportion of the respondents had completed two years of a training program in 1978 than had ever attended at the time of the first survey. The second survey was conducted approximately two and one-half years after the first, so a number of youths must have entered vocational programs soon after March 1976 (probably in September) and attended for two consecutive years.

Low ability youths were more likely than the high ability groups to attend training programs and to complete at least two years of a program. Individuals with low ability can expect to benefit more from training programs relative to academic programs, compared with high ability youths. On the whole, fewer women than men receive noncollegi-

ate training. Men are more likely to find employment in the kind of jobs that require training programs, and probably more likely, for a variety of reasons, to be directed toward technical fields.

The probability that women will receive noncollegiate training varies across marital status groups. Women who were married in both surveys were least likely to have completed two years by 1978, although generally just as likely to have attended in 1976. The competing demands on their time and their lower attachment to the labor force, referred to above, are the most probable reasons for their low completion rates.

Future educational plans and family background factors are also expected to be strongly related to educational attainment. Tables 9 and 10 show the proportions of men and women, respectively, reaching these selected schooling levels, stratified by educational aspirations and parents' income. These tables were also computed by parents' education (some college and no college); because the patterns were very similar to those observed by income level, they are not included in this report.

As was mentioned previously, to have received a B.A. by 1978, respondents would have had to attend college full time for the four years immediately following high school graduation. Thus, the relatively low completion rates (compared with 1976 attendance rates) do not necessarily imply that very few respondents will eventually finish college. Individuals may have taken time off from school between high school and college, taken a leave of absence after being enrolled for some period, or attended school part time for part or all of their time enrolled. An

Table 9. PROPORTION OF EDUCATIONAL ASPIRATION AND PARENTAL INCOME GROUPS ACHIEVING SELECTED LEVELS OF EDUCATIONAL ATTAINMENT, MEN

Characteristics	Number	Had some college, 1976 (%)	Completed B.A., 1978 (%)	Had some noncollegiate postsecondary training, 1976 (%)	Completed two years noncollegiate postsecondary training, 1978 (%)
TOTAL	1,207	68.1	28.7	6.7	7.4
Expect to complete a B.A., in both surveys	703	94.3	48.8	1.6	3.4
High parents' income[1]	443	94.8	50.6	1.4	2.9
Low parents' income[1]	260	93.5	45.8	1.9	4.2
Expect to complete a B.A., 1976 only	50	60.0	0.0	14.0	12.0
High parents' income[1]	25	68.0	0.0	16.0	12.0
Low parents' income[1]	25	52.0	0.0	12.0	12.0
Expect to complete a B.A., 1978 only	118	59.3	2.5	12.7	16.1
High parents' income[1]	61	59.0	1.6	18.0	9.8
Low parents' income[1]	57	59.7	3.5	7.0	22.8
No expectation of completing a B.A.	336	17.6	0.0	14.3	11.9
High parents' income[1]	140	22.9	0.0	12.9	11.4
Low parents' income[1]	196	13.8	0.0	15.3	12.2

[1]See definitions of parents' income groups in Appendix A.

Table 10. PROPORTION OF EDUCATIONAL ASPIRATION AND PARENTAL INCOME GROUPS ACHIEVING SELECTED LEVELS OF EDUCATIONAL ATTAINMENT, WOMEN

Characteristics	Number	Had some college, 1976 (%)	Completed B.A., 1978 (%)	Had some noncollegiate postsecondary training, 1976 (%)	Completed two years noncollegiate postsecondary training, 1978 (%)
TOTAL	1,491	65.1	29.9	6.4	6.0
Expect to complete a B.A., in both surveys	748	95.6	59.0	2.3	3.3
High parents' income[1]	486	97.7	60.9	2.1	3.9
Low parents' income[1]	262	91.6	55.3	2.7	2.3
Expect to complete a B.A., 1976 only	38	65.8	2.6	7.9	13.2
High parents' income[1]	18	72.2	5.6	11.1	22.2
Low parents' income[1]	20	60.0	0.0	5.0	5.0
Expect to complete a B.A., 1978 only	139	66.2	2.2	12.2	16.6
High parents' income[1]	76	68.4	2.6	11.8	18.4
Low parents' income[1]	63	63.5	1.6	12.7	14.3
No expectation of completing a B.A.	566	24.4	0.0	10.4	6.4
High parents' income[1]	243	28.4	0.0	10.7	8.6
Low parents' income[1]	323	21.4	0.0	10.2	4.6

[1]See definitions of parents' income groups in Appendix A.

improvement in labor market conditions (rising wages and falling unemployment), such as occured over this period, raises the cost of staying in school. A number of students are induced to leave school and work, while among those in school, part-time and part-year work become more prevalent.

Thus, we did not expect to observe that most of the sample had already fulfilled their educational aspirations, although most educational investments are generally made at a young age, in order to maximize the number of years in which the returns can be realized. Therefore, within the next few years most of those who now plan to complete college will either graduate or revise their expectations. However, it is interesting to examine the consistency between plans and achievements at this stage in the life cycle.

The four educational aspirations categories are: expect to complete a B.A., in both surveys; expect to complete a B.A., 1976 only; expect to complete a B.A., 1978 only; and no expectation of completing a B.A. More than half of both women and men fell into the first of these categories, although it was more common among men. Each of the changed plans categories accounted for slightly more men than women, while 38 percent of the women and only 28 percent of the men consistently had no expectation of completing a four-year college degree. Men's educational goals are obviously higher than women's, because of factors mentioned above relating to expected labor force attachment over the life cycle. This result is observed despite the fact that women who do want to pursue rewarding careers will probably have to go farther in school. As

mentioned above, women often must acquire more education than men to achieve similar financial goals.

Changes in educational goals are to be expected for this age group. As youths progress through their first few years out of high school, inflows of new information, changes in capacities, opportunities, or constraints, or various intervening experiences cause them to modify their goals. Many teenagers have set unrealistic goals for themselves, and as they spend time in school and are exposed to the labor market, their goals adapt and become more realistic. Although less than 15 percent of this sample changed their goals between 1976 and 1978 (in terms of expecting to graduate from college), the 1976 educational goals may represent modifications of the plans they had in high school. Because educational decisionmaking is a cumulative, adaptive process, their goals may change further in the years to come.

In 1978, fewer women than men had revised their schooling plans, particularly in a downward direction. Men might be more likely than women to change their plans because they have gained more information during the intervening years on which to base their goals. As is discussed above, it may be easier for men than for women to achieve financial success without attending college, and men may become increasingly aware of these options as they grow older and are exposed to the labor market. For example, a male youth might go to work in an automobile plant directly out of high school, planning to earn money in order to attend college in several years. However, as he works and receives on-the-job training, he moves up and becomes an apprentice. By this time,

he has realized that he can have a satisfying and high-paying career without investing in further education, and the returns he must forego to attend college are much higher than they were before he was trained. These sorts of opportunities are less frequently available to women. An additional factor here might be the generally declining income differential between the less educated and the highly educated. Men might react more strongly to the declining returns, because they are more likely to be heads of households.

There seems to be a general consistency between aspirations and achievements. The smallest groups of both men and women to attend any college were those who had no expectation of completing a bachelor's degree. More women than men in this category did attend, perhaps because women were more likely to get parental support for financing their educations. As might be expected, no one in this group had completed college in 1978. In contrast, almost all of the individuals who consistently expected to graduate from college had already attended in 1976, and more than half of these had completed college by 1978. The proportion completing was higher among women, for reasons discussed above.

The rates of college attendance observed in the first survey are basically the same for both changed plans groups. Virtually no members of either group had received the baccalaureate by 1978. Because the individuals who expected a B.A. in 1978 only had not planned to graduate in the earlier year, they probably had not been in school continuously between 1974 and 1976, and since their plans changed during the

next two years, it would be highly unlikely that they would have finished college by 1978.(13)

As was observed earlier, noncollegiate training is pursued by less than ten percent of the overall sample, and by fewer women than men Individuals who planned to complete college in both surveys were naturally least likely to enter vocational training programs. Those men who had no expectation of receiving a bachelor's degree were most likely to have attended a postsecondary noncollegiate program in 1976. However, the highest proportion of any educational goal group to have completed at least two years of training in 1978 is among those individuals who expected to complete college in 1978 only. This group of women exhibits the highest probability of attending in 1976 as well as the highest probability of completing two years in 1978. It seems likely that this aspirations group attended at least two years of noncollegiate programs, received various types of degrees or certificates, and then decided to go on in college as well--perhaps because they tend to be highly ambitious or career-oriented, because by the time they completed a training program they were more directed in terms of specific career goals and realized that a college degree would be helpful in this field, or because the monetary or psychic returns to noncollegiate training were sufficiently high to convince them that a college education would be a worthwhile investment. These women in particular may have realized,

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(13) Strangely, women who no longer expected a B.A. in 1978 were slightly more likely than those who had revised their goals upward to have graduated from college before the second survey. However, neither of these groups (particularly the expect B.A., 1976 only) are very large, and small sample sizes may be influencing the results.

after receiving training and being exposed to the labor market, that they were more committed to the labor force than they had previously believed, and therefore that they would be able to reap the rewards of investing in an academic program.

In contrast to men, women with no expectation of completing college were not the group most likely to attend vocational school, and they were the least likely, after those with expectations of completing a B.A. in both surveys, to complete two years of noncollegiate training. This group of women probably plans to spend the least time in the labor force and would not choose to make any significant educational investments.

Socioeconomic status is generally an important predictor of college attendance. As we observed earlier, parental support is a large factor in educational financing. Further, educational goals are shaped in part by family background. The majority of individuals from high income families expect to graduate from college in both surveys (66 percent for men, 60 percent for women), compared with much lower proportions of youths from low income families (48 percent for men, 39 percent for women). Correspondingly, the proportions of high income respondents with no expectation of completing a four-year degree (21 percent for men, 30 percent for women) are significantly lower than the proportions of low income respondents in this aspirations category (36 percent for men, 49 percent for women).

Parents' income does seem to be related to the probability of college attendance for this sample. Both men and women from high income

Table I1.PERCENT OF RESPONDENTS CHOOSING MANAGERIAL OR PROFESSIONAL JOBS AS PERMANENT OCCUPATIONS, BY PARENTS' INCOME, PARENTS' EDUCATION, AND SEX, 1976 AND 1978

	Choice of managerial or professional job (%)	
	1976	1978
By parents' income[1]		
High parents' income	64.0	64.7
Men	67.2	64.3
Women	61.3	65.1
Low parents' income	54.7	51.3
Men	56.8	52.6
Women	53.0	50.3
By parents' education[1]		
At least some college	73.1	72.5
Men	76.6	70.7
Women	70.1	74.1
No college	51.4	49.5
Men	54.0	50.8
Women	49.2	48.4

[1]See definitions of parents' income and parents' education groups in Appendix A.

families are much more likely than those from low income backgrounds to enter college and to have completed four years by 1978. The one anomalous relationship is observed for men who expect to complete a B.A. in 1978 only. Low income individuals in this aspirations group are slightly more likely than high income youths to have attended by 1976 and to have graduated by 1978.(14) The absolute gap between income classes is generally larger for 1976 attendance than for 1978 completion. In part, this probably reflects improved economic conditons--during periods of high unemployment, the influence of parents' income on educational choices may be more dominant. In addition, one would expect to observe that for individuals who continue in school beyond high school, further schooling tends to erode differences associated with socioeconomic status at earlier stages of the life cycle.

In general, the differences across income groups are not as large when attendance and completion of noncollegiate programs are examined. For men but not for women, low income individuals are generally more likely to have completed two years or more of training programs in 1978. Within each aspirations group, youths from high income families are more likely to go to college; thus, it is not surprising that many individuals who choose not to attend college, in part for financial reasons, will decide to make an alternative cheaper investment. This may not be a strong influence for women, because of their generally lower commitment to the labor force. Women from high income families are more

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(14) This may be merely a question of timing. These individuals changed their goals at some point between the 1976 and 1978 surveys, but it is not clear exactly when. By random chance, the low income youths may have made their decisions earlier and thus had more time to attend.

likely than women from low income backgrounds to be labor force participants, so they will invest in any type of training to a greater extent.

In addition to playing a role in educational expectations and schooling decisions, parental factors would be expected to influence an individual's desired career path. Table 11 shows the percentage of respondents in different parents' income and education groups selecting anagerial or professional jobs as their "most likely permanent job or occupation", in 1976 and 1978. The managerial and professional job category subsumes a wide variety of positions, including bank officers, elected officials, accountants, artists, doctors, engineers, lawyers, scientists, statisticians, and teachers. These are jobs that generally require formal schooling or training, and often involve significant investments of time and resources. Correspondingly, these occupations are among the highest paid fields.

Between 1976 and 1978, the overall proportion of individuals choosing managerial or professional jobs did not change substantially, although certain groups experienced large changes. The general trend seems to be downward. As is discussed above, goals are modified over the life cycle through an adaptive process that is particularly active at earlier ages, when the individual's information about educational institutions, the labor markets, and personal goals is growing rapidly. Therefore, one might expect to see evidence of goal instability for this sample. As the respondents mature and their knowledge about career opportunities and their own capacities increases, through either work experience or training, their goals may become more realistic.

Persons from high income families, both men and women, are more likely than those with less prosperous parents to choose a managerial or professional career. As we have seen, youths from high income families are more likely to attend and complete college, and also to aspire to a college degree. More of the high income parents are themselves employed in managerial or professional occupations (accounting, in part, for their higher earnings), and there is a tendency for socioeconomic status to carry over from one generation to the next.

Within parental income groups, men choose managerial or professional jobs to a greater extent than women do. This is consistent with the relative occupational employment of men and women in the national economy. In March 1978, for example, 77.1 percent of the white male college graduates age 16 and over worked in managerial and professional jobs, as opposed to 74 percent of the comparable female group.(15) Although some of the jobs in this grouping (such as elementary and secondary school teachers or registered nurse dieticians) tend to employ more women than men, the managerial and professional category as a whole is male-dominated. In part, this is because most of these "typical" male occupations require higher education, often graduate school, and such large investments in human capital imply a strong commitment to the labor force. In addition, the old boy network referred to earlier may operate for the highly educated as well, especially for men, with well-connected alumni and professors assisting students in obtaining employment

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(15) U.S. Department of Labor, Bureau of Labor Statistics, Educational Attainment of Workers - Some Trends from 1973 to 1978, Special Labor Force Report No. 225, (Washington, D.C,: Government Printing Office, 1979).

Between 1976 and 1978, the relationship between high income men and women shifts, with women becoming slightly more likely than men to choose managerial and professional jobs in the later year. Social mores have been changing over time, and the women's movement has made inroads into career thinking, so that women are increasingly branching out from the traditional female occupations. In addition, equal-pay and equal-employment-opportunity legislation facilitates women's access to managerial and professional positions. The impact of changing attitudes would not surprisingly show up first for high income youths. For one, these women may be more aware of changes, more sensitive to their expanding opportunities. More importantly, women from high income backgrounds have the resources to invest in more education. Higher educational levels are associated with a greater probability of labor force participation, and the expectation of being employed in these traditionally male occupations would be associated with labor force participation plans because of the necessarily high investment in education and training.

There also seems to be a relationship between socioeconomic background and goal stability. Persons from low income families are more likely to lower their goals. In part, this can be explained by the propensity for expectations to initially tend toward the mean, but to vary more with individual characteristics as experience and information are acquired. That is, individuals who will be very successful in the labor market may underestimate their capabilities when they are young, while

individuals who will be less successful are more likely to overestimate. Over time, expectations will be altered to conform with reality. This pattern is also observed when youths are stratifed by parents' education.

Parents' income and parents' education generally seem to have similar effects on career goals, but the patterns by parents' education are more pronounced. Children whose parents have attended at least some college are almost 50 percent more likely than those whose parents had no college to choose managerial or professional jobs, while the differential by parents' income is closer to 25 percent. Parents' educational levels may be more strongly related than their income to the type of job they hold. If children are likely to attain schooling levels similar to their parents' and to follow similar career paths, this result would follow.

Within parents' education groups, the differences between men and women are of similar magnitude to those observed by parents' income level, although the shift between the two surveys for men and women in the higher level group is more striking. Again, this shift can be explained by women's increasing information about job opportunities and by changes in the external environment. If, as mentioned above, the educational attainments of parents and children are highly correlated, parents' education might be a better predictor than parents' income of the respondents' own schooling levels. Then, the shift would be more evident with this stratification.

Table 12 relates the choice of managerial or professional occupations to sex, ability, and educational aspirations. After selecting their most likely permanent job, respondents were asked what job they thought they might have if they were not employed in this position. Respondents whose first and second most likely jobs required more education than they currently had were asked to indicate the job in which they thought they would be employed if they could not complete any more training or education. This third column shows the largest change between the two surveys. From an average of 17.4 percent in 1976, the choice of managerial or professional occupations increased almost threefold, reaching 51.3 percent in 1978. Because their career goals required further schooling, a large proportion of this group was probably in school during the interval between the surveys. At their higher educational level in 1978, a great number of individuals were qualified for managerial or professional positions that had not been within their reach two years earlier.

A higher proportion of first choices than second choices are managerial or professional, in both years. If they were frustrated in their career plans, many youths would revise their goals downward. Similarly, in 1976 it is more probable that the second choice will be managerial and professional than that the choice with current education will be in this category. However, in 1978, 51 percent of the current education choices are managerial or professional, as opposed to 44 percent of the second choices. As mentioned above, the managerial and professional category includes very diverse occupations, some of which require significantly more schooling than others. The choice with current education

Table 12. PERCENT OF RESPONDENTS CHOOSING MANAGERIAL OR PROFESSIONAL JOBS AS PERMANENT OCCUPATIONS, BY SEX, ABILITY, AND EDUCATIONAL ASPIRATIONS, 1976 and 1978

Characteristics	1976 Managerial or professional job as: First choice	Second choice	Choice with current education[1]	1978 Managerial or professional job as: First choice	Second choice	Choice with current education[1]
TOTAL	59.7	42.0	17.4	58.6	43.8	51.3
MEN	62.9	48.4	20.9	59.4	47.0	53.4
High ability[2]	75.5	58.2	22.3	71.5	59.0	61.3
Expect to complete a B.A.	87.1	65.9	23.5	81.0	67.1	65.4
Do not expect a B.A.	31.3	26.5	13.0	27.3	21.4	27.3
Low ability[2]	47.1	35.6	18.4	43.9	31.5	42.5
Expect to complete a B.A.	78.5	56.7	25.5	69.1	47.1	57.6
Do not expect a B.A.	26.3	21.9	9.9	23.0	17.9	23.8
WOMEN	57.3	37.1	13.8	58.0	41.2	49.3
High ability[2]	70.1	46.4	14.7	69.7	51.0	55.5
Expect to complete a B.A.	86.6	57.4	15.5	84.1	61.1	60.5
Do not expect a B.A.	33.5	20.2	9.8	25.7	19.9	26.7
Low ability[2]	41.7	25.4	12.0	43.2	28.7	42.6
Expect to complete a B.A.	78.0	45.9	16.8	77.9	52.7	55.2
Do not expect a B.A.	26.3	16.3	6.7	21.5	14.1	32.7

[1]This question was asked of only those individuals whose first and second choices required more schooling or training than they currently had.

[2]See definitions of ability groups in Appendix A.

is probably more likely than either of the other choices to be a job that does not involve a large investment in human capital. On the other hand, there are many non-managerial or professional jobs that require high levels of skill or training. It is conceivable that these jobs would be more prevalent as second choices than as choices with current education. The importance of these factors can not be ascertained from the table, but they may provide the explanation for this surprising result.

Men select managerial and professional jobs more frequently than women, in all three choice groups. However, the differential narrows over time as women become slightly more likely to choose managerial and professional jobs and men slightly less likely.(16) Persons of high ability are in all cases much more likely than persons of low ability to plan on managerial or professional careers, which is consistent with the tendency for high ability youths to become better educated.

Educational aspirations are more closely related to occupational goals than either sex or ability. For all respondent and choice groups in both years, a much higher proportion of individuals who expect to complete a bachelor's degree than of those who do not plan to graduate from college chose a managerial or professional occupation. Many of these occupations require at least a four-year degree; the correspondence between educational and occupational goals indicates that the latter are fairly realistic for most of the respondents. This probability

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(16) The choice with current education is an exception to this pattern that has already been discussed, but the probability of selecting a managerial or professional job in this choice group increased at a higher rate for women than for men.

is further supported by the observation tht neither schooling nor career plans seem to have been substantially altered between 1976 and 1978.

The third and fourth columns of Table 13 display the choices of managerial or professional jobs for a sample further stratified by women's marital status. Current schooling level (more than high school and high school graduate or less, in 1978), rather than expected educational attainment, is examined here. The patterns are similar to those observed in Table 12: the higher the schooling level, the higher the likelihood that a managerial or professional job is the desired permanent occupation. In addition to the fact that more educated individuals are more likely to be qualified for managerial or professional occupations, a reason for the generally increasing level of educational attainment over time may be that increasing numbers of youths are interested in this type of occupation and have chosen to continue in school in order to earn the credential. Higher educational attainment is associated with greater labor force participation, and managerial and professional jobs, as a group, probably offer the most interesting and challenging employment for the highly educated.

The declining differences between the probabilities of choosing a managerial or professional job for men and women were observed in the preceding tables. The tendency to choose this type of job particularly decreased for high ability, less educated men. In 1976, this group's goals primarily reflect their recognition of their own capabilities. However, by 1978, they probably realize that without further education, the likelihood of a professional career is very small. Thus, their

Table 13. CHANGES IN INCOME EXPECTATIONS, CHOICE OF MANAGERIAL OR PROFESSIONAL JOBS AS PERMANENT OCCUPATIONS, AND LABOR FORCE PARTICIPATION PLANS BETWEEN 1976 AND 1978, BY ABILITY, SCHOOLING LEVEL, SEX, AND MARITAL STATUS

Characteristics	Change in expected real income, 1976 to 1978		Percent choosing managerial or professional jobs as permanent occupations		Percent with strong expected labor force attachment	
	No increase (%)	Increased (%)	1976	1978	1976	1978
TOTAL	48.0	52.0	59.9	58.8	64.3	63.4
High ability[1]	49.2	50.8	72.5	70.6	66.4	65.8
More than high school	49.5	50.5	78.5	77.3	67.5	67.2
Men	49.1	50.9	80.3	78.0	95.2	91.3
Women	49.8	50.2	77.0	76.6	44.5	47.0
Married, both surveys	54.6	45.4	55.7	68.3	37.5	39.3
Married, 1978 only	52.3	47.7	72.2	66.9	36.0	25.5
Not married, 1978	48.7	51.3	80.7	80.4	47.6	53.9
High school graduate or less	47.0	53.0	37.1	31.0	59.4	57.0
Men	47.5	52.5	43.9	32.7	95.6	91.8
Women	46.5	53.5	32.7	29.9	32.5	32.6
Married, both surveys	42.9	57.1	25.4	31.3	27.7	23.8
Married, 1978 only	50.0	50.0	26.7	20.0	31.0	28.6
Not married, 1978	48.4	51.6	46.0	34.0	38.3	46.8
Low ability[1]	46.3	53.7	43.6	43.7	61.6	60.4
More than high school	48.2	51.8	56.4	57.9	64.2	62.7
Men	53.0	47.0	58.2	54.6	88.9	91.4
Women	43.3	56.7	54.9	60.7	42.9	38.4
Married, both surveys	37.9	62.1	36.4	42.2	33.3	35.7
Married, 1978 only	37.8	62.2	55.5	57.4	37.8	29.6
Not married, 1978	46.2	53.8	57.6	64.9	46.0	42.1
High school graduate or less	43.1	56.9	25.0	23.2	57.4	57.1
Men	41.7	58.3	29.2	26.3	89.7	94.7
Women	44.6	55.4	21.9	20.9	28.6	29.0
Married, both surveys	47.7	52.3	18.8	16.6	25.0	27.5
Married, 1978 only	36.7	63.3	8.3	12.8	15.9	14.6
Not married, 1978	44.2	55.8	32.7	31.1	38.3	38.2

[1]See definitions of expected real income and ability groups in Appendix A.

goals become more realistic. Rather than modifying their future plans, some members of this group decide to get more education. As we will observe later, these men were more likely than high ability, better educated individuals to increase their educational aspirations between 1976 and 1978.

For one ability/education group (low ability, more than high school), the relationship between men and women shifts over time. In 1978, these women are more likely than the men to choose managerial or professional permanent occupations. Most of the low ability men who have continued in school beyond high school have probably attended vocational or technical programs, which lead toward non-managerial and professional fields. The women in this group, who initially may have underestimated their opportunities, have increasingly come to the realization that for educated women, a managerial or professional career is attainable and rewarding.

The marital status breakdown offers further insight into the determinants of women's occupational goals. Women who were married at the time the first survey was conducted (the married, both surveys group) generally exhibit the lowest likelihood of planning on a managerial or professional career in 1976. The not married 1978 women are consistently most likely to choose managerial or professional jobs in 1976; the probability that they will choose these occupations is as high or higher than the probability for men. Because single women can expect to spend more time in the labor force than married women, they have invested more in education and are more likely to be employed in career

jobs that require substantial training and provide higher returns. This stronger commitment to the labor force may be either the cause of their marital status (they have not yet married because they want to devote their energies to their careers) or the result of their marital status (whereas married women have family commitments that compete with the demands of work, unmarried women can pursue their careers more exclusively). Of course, as mentioned previously, many of the unmarried women in this sample are probably planning to marry in the future.

The third group of women, those who were married between 1976 and 1978, more closely resemble the not married 1978 women than those who were married throughout the period. Although single at the time, these women's eventual plans for marriage were more concrete and therefore their expected labor force participation (and their concomitant expectations of having a managerial or professional career) was slightly lower than that of the not married 1978 group. The low ability, less educated women were an exception to this pattern - married 1978 only women in this category had the lowest probability of choosing a managerial or professional job (8.3 percent) of any group in the table.

Revisions in occupational goals between 1976 and 1978 are not consistent across marital status groups. As expected, the not married women continue to choose managerial and professional jobs to a greater extent than the other two groups. High ability single women, particularly those with less education, revised their goals downward over time. Perhaps this group's original goals were primarily related to their knowledge that they were capable of working in a managerial or professional position, but after being out of high school for four years with-

out receiving any further schooling, they decided that their goals might not be realistic. Among low ability single women, the less educated are less likely in 1978 than in 1976 to choose managerial and professional jobs, but the opposite is true for the highly educated women in this group. The rationale behind this might be the reverse of that outlined above: the goals of low ability women, originally formed in response to their estimates of their capabilites, were revised upward after they attended college, thus improving their skills as well as gaining more information about the labor market and the necessary qualifications for certain jobs. All of the women in this group, regardless of marital status, increased their goals between the two surveys.

In general, women who were married in both surveys were more likely to choose managerial and professional jobs in 1978 than in 1976, while high ability women who were married in 1978 only tended to change their occupational goals in the other direction. After being married for some time, women may realize that they are able to satisfy family responsibilities and career imperatives to a greater extent than they had previously thought possible. In contrast, recently married women are just becoming aware of the conflicting demands on their time. If the sample were surveyed again, several years later, the same process might be evident for this group.

Low ability women who were married in 1978 only exhibit a different pattern over time, being more likely to choose managerial or professional jobs in 1978. This is particularly true of the less educated women, whose 1976 level is extremely low. Considering the low levels,

this may be evidence of a reporting problem, particularly since expected labor force attachment actually fell for this group.(17)

The explanations advanced for the differences in occupational goals between men and women and among marital status groups often relate to the prospective labor force participation of the various respondent groups. The validity of these arguments can be examined by looking at the last two columns of Table 13, which show the proportions of individuals in 1976 and 1978 with strong expected labor force attachment. Strong expected labor force attachment is defined as planning to usually work full time during the next twenty years. In selecting one or more expected activities, in addition to full-time work the respondents could choose part-time employment (which was anticipated by less than 20 percent of the sample), full- or part-time schooling (about one-third of the sample during the next ten years and ten percent thereafter), full-time homemaking (15 percent of the respondents), and part-time homemaking (about one-third of the sample). The overall proportion of respondents with strong expected labor force attachment fell slightly over the two years. As discussed above, youths often set goals for themselves that are proved unrealistic by intervening experiences and are therefore modified over time.

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(17) When very few individuals in a group give a particular response, one or two answers can cause a lot of variation. Questions that require respondents to reflect on their attitudes, rather than to make a statement of fact, are especially susceptible to this problem, because the responses may vary greatly from year to year (or from day to day), even if attitudes have not changed.

High ability respondents are more likely than low ability respondents to be strongly attached to the labor force, presumably because they can earn more in the labor market and therefore the costs of not working are higher. Better educated youths appear to be more attached than the less educated, but when these groups are disaggregated by sex, a different pattern emerges. Highly educated men are slightly less likely than less educated men to be strongly committed to their work, particularly among low ability youths. Because higher educational attainment is associated with higher earnings, it is conceivable that men who have attended beyond high school can more easily afford to spend time out of the labor force as they age, because they have built up higher reserves in the early years. (As we have seen, better educated men are more likely to expect to be working in high-paying managerial and professional jobs.) At this higher earnings level, part-time work might eventually be sufficient to provide a decent living.

An additional explanation for this result lies in the definition of "strongly attached". The apparently lower level of expected labor force attachment might actually represent an expectation of continuing their educations. Given the measure being used here, individuals who plan to spend most of the years between the ages of 25 and 30 in graduate school will not appear to be strongly attached to the labor force. In actuality, they are probably very strongly committed, or they would not plan on making this large investment in education. This factor has less of an impact on high ability men, because many of the less educated youths in this group will probably return to school. (They may have taken time out of school to work and finance later schooling investments, or they

may become disillusioned with work because they are not able to secure challenging positions, and therefore decide to get additional training.) In contrast, less educated low ability youths are probably least likely to return to school. Therefore, the difference between educational groups in this ability class is more pronounced.

Among women, the relationship is completely opposite, and the differentials are large. Women with more education are much more likely to be strongly attached. This very strong positive relationship between schooling and the labor force participation plans of women reflects the high rewards to education (which represent in effect, the cost of not working). In addition, there is probably a correlation between the taste for schooling and the taste for market work. Finally, the educated worker has greater access to the more challenging and interesting jobs. Both ability and schooling level can be seen as proxies for income; thus, if the substitution effect outweighs the income effect, positive relationships with labor force attachment might be expected.(18) Of course, the percent of women with strong expected attachment is at almost every level less than half of the comparable proportion of men, and in many cases less than one-third. Further, although a positive correlation between educational attainment and labor force attachment might be observed before a woman has children, after childbirth the relationship may not be as strong, because better edu-

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(18) Although there is evidence that men traditionally have backward-bending supply curves (that is, that at higher income levels, the income effect outweighs the substitution effect), women have been observed to have monotonically increasing labor supply schedules (that is, the substitution effect is always greater than the income effect).

cated women may tend to spend more time at home caring for young children.(19)

Some of the respondent groups' work plans change significantly between 1976 and 1978. The attachment of high ability men tends to decrease, and the reverse is true for low ability. The explanations for this may be similar to that advanced above for the stronger prospective attachment of less educated men: high ability men tend to be more educated and to receive higher paying jobs, thus they are more likely to be able to afford to take time out of the labor force or to work part time. (Of course, the costs of not working are also higher for this group.) In addition, as discussed above, increasing numbers of the high ability men are realizing that they plan to return to or continue in school, and because of the definition of strong expected labor force attachment, this decision shows up as a decreasing commitment to the labor force. Low ability men with less education, on the other hand, are probably beginning to realize that if they haven't yet continued beyond high school, they probably never will. For women, the changes over time are not consistent, and the patterns are clear only if the marital status groups are examined.

As expected, not married women plan to be most strongly attached to the labor force, and their expected attachment is more likely to increase over time than to decrease. This is consistent with the high probabilities that they will attend college and aspire to careers in

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(19) See Center for Human Resource Research, The Ohio State University, Years for Decision, vol. 4 (Columbus, Ohio: Center for Human Resource Research, November 1977), p. 86, for a discussion of the evidence on this point.

managerial or professional occupations. For the small number of women in this group who are divorced or widowed, an additional factor here is that marital disruption tends to increase attachment to the work force, because employment enables women to at least partially compensate for the loss of their husbands' earnings. (Conversely, a stronger commitment to the labor force may sometimes be the cause of marital disruption.) The secular trend in this country has been for the labor force partcipation of women to rise, because of their increasing educational attainment and improved labor market opportunities, the smaller average size of families, and changing social attitudes. However, the expected labor force attachment of men is much higher than even that of single women. As was stated above, most women do marry and even more may expect to do so.

Women who were married throughout the period generally had the weakest expected labor force attachment initially, but were slightly more committed to their careers by 1978. As was observed in the discussion of occupational goals, there seems to be a tendency for women to revise their plans in this direction after they have been married for some time. In addition to the general upward trend in womens' labor force participation and these women's changing estimates of the compatibility of family life and careers, a reason for this increase may be that this group is the most likely to have already had children and may have decided to resume (or begin) working when the children are still young.

As with educational attainment and occupational goals, women who were married in 1978 only generally fell between the two extremes in 1976. A glaring exception to this pattern is low ability, high school educated women, where the group that was married between the two surveys is extremely unlikely to plan to be in the labor force for most of the next two decades. A similarly low proportion of this group selected managerial or professional jobs as permanent occupations. As is mentioned above, this probably reflects a reporting problem. The proportions of this marital status group with strong expected labor force attachment uniformly decreased between 1976 and 1978, by as much as ten percentage points. As they were married, these women evidently planned to spend less time working in the future and more time at home. This change corresponds to the large differential for this group between the proportion who had attended college by the time of the first survey and the proportion who had completed a bachelor's degree by 1978. Marriage seems to have an initial negative effect on expected labor force attachment, which appears to subside over the course of the marriage.

The third panel of table 14 shows the relationship between expected labor force attachment and enrollment status more clearly. Men who are enrolled full time in 1978 plan to be most strongly attached to the labor force in 1976; followed by part-time enrollees. Those who are not enrolled exhibit the lowest level of expected labor force attachment. However, the differences between these groups are very small.

Interestingly, the order is reversed in 1978. Because the enrollment status distinctions apply to 1978 activities, the relationships

Table 14.CHANGES IN INCOME EXPECTATIONS, EDUCATIONAL ASPIRATIONS, AND LABOR FORCE PARTICIPATION PLANS BETWEEN 1976 AND 1978, BY SEX AND ENROLLMENT STATUS

Characteristics	Change in expected real income, 1976 to 1978[1]		Change in educational aspirations, 1976 to 1978			Percent with strong expected labor force attachment	
	No increase (%)	Increased (%)	Decreased (%)	No change (%)	Increased (%)	1976	1978
TOTAL	48.3	51.7	14.0	45.7	40.3	64.1	63.2
Men	48.9	51.1	16.8	45.4	37.8	92.8	92.0
Enrolled full time, 1978	64.1	35.9	9.6	48.7	41.7	93.7	89.9
Enrolled part time, 1978	49.9	50.1	10.3	52.2	37.5	93.5	92.0
Not enrolled, 1978	46.1	53.9	21.1	41.5	37.4	92.3	92.4
Women	47.8	52.2	11.9	45.9	42.2	40.5	40.2
Enrolled full time, 1978	54.6	45.4	4.6	53.0	42.4	45.7	56.5
Enrolled part time, 1978	44.2	55.8	11.4	44.3	44.3	51.6	48.7
Not enrolled, 1978	48.0	52.0	12.8	45.5	41.7	37.5	36.8

[1]See definition of expected real income in Appendix A.

between enrollment and 1978 expectations should be more reliable. If enrollment in 1978 is an indication that these youths will be more highly educated in the long run, the explanation for the 1978 ordering may be that used above to explain the higher expect labor force participation of less educated and lower ability men: individuals who will earn more in the labor market can more easily afford to work less than full time at later stages of the life cycle. Also, as is stated earlier, enrolled youths may plan to spend a significant amount of time in school in the future, and therefore may not appear to be strongly attached.

The variations by enrollment status are much larger for women, and the relationship is more consistent over time. Not enrolled women are least likely to plan to be strongly committed to their careers, and the level for this group falls slightly between 1976 and 1978. Presumably, the reason why these women are not in school is that they do not plan to be in the labor force for a long enough period to receive the maximum benefits of an investment in human capital. Women enrolled part-time are most likely in 1976 to plan to be full-time workers for most of their adult lives. The women who are enrolled full time are also strongly attached to the work force, and their attachment increases between 1976 and 1978. If individuals are going to continue in school, they should plan to make the investment worthwhile.(20)

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(20) The increase between 1976 and 1978 may reflect a solidification of career goals brought about by the women's movement, which tends to have a stronger impact on highly educated women.

0.5 EXPECTED FUTURE EARNINGS AND EDUCATION

As we have seen in connection with expected labor force attachment and career plans, young people's future plans are made on the basis of current information and the experiences of parents and peers, and modified over time in response to new information, intervening experiences, and changes in the external environment. In this section, we examine the determinants of earnings expectations and career goals, and the patterns of changes in these plans. Expected income and educational levels are closely interrelated. Financial goals are often a factor in an individual's decision to acquire further training. In addition, many of the factors that determine expected earnings levels (such as ability, sex, and marital status) also influence educational aspirations.

Because the respondents are young and many are still in school, their current earnings are extremely variable, depending on how many hours per week and weeks per year they have worked, how much training they have received, how long they have worked in their current jobs, and so on. Later in the life cycle, earnings and work patterns will be more stable and it will be easier to ascertain the relationships between such factors as ability, education, or sex, and income. The respondents were asked in both surveys to estimate their yearly pretax earnings in their "most likely permanent" occupations with ten years of experience. In 1978, two-thirds of the estimates fell between $10,000 and $40,000, with a mean of $21,615. These figures were adjusted for inflation and compared. The first two columns of Table 13 display the proportions of various respondent groups who increased and did not increase their estimates of expected real income between the first and second surveys.

On average, more individuals raised their expectations than did not. The differential is larger for low ability than for high ability youths. As is discussed above, changes in future plans and expectations are often the result of inflows of new information and are therefore most common among younger persons. As recent high school graduates, low ability individuals had less information than high ability individuals on how the labor market operates. By 1978, employment and educational experiences and increasing maturity enable them to make more informed judgements about future goals. We observed earlier that more low ability respondents chose managerial or professional jobs as permanent occupations in 1978 than in 1976. Similarly, this group is likely to revise their income expectations upward between 1976 and 1978. In 1976, their estimates were based in part on their experiences in low-paying entry level positions. By 1978, they may have had experience in a higher level career-oriented job, and therefore have higher income expectations.

Arguing against the above factors would be the fact that low ability (and less educated) youths have comparatively narrow labor market opportunities. Therefore, one would expect that they would be fully informed about possible career paths at an early stage, and actually be less likely than high ability contemporaries, who face a much wider range of opportunities and therefore numerous and more difficult decisions, to revise their income expectations. Obviously, if these influences are at all important, they are outweighted by the earlier arguments, because 54 percent of the low ability respondents, compared with 51 percent of the high ability respondents, have higher income expectations in the later year.

In both ability groups, individuals with more than a high school education are least likely to have higher expected income levels in 1978. The explanation is similar to the reason for the difference across ability groups. Less educated individuals are relatively less informed, compared to youths with more schooling, in the earlier survey year, when they are younger and less experienced. Again, too, they are more likely to have moved up the career ladder from unattractive 1976 entry jobs, and this results in improved earnings expectations. In addition, youths with collegiate training may be unlikely to raise their income expectations because earnings of college-educated workers have been increasing at a slower rate than earnings of other schooling groups. (Between 1975 and 1978, for example, the proportional increase in the median earnings of year-round, full-time workers age 25 and over was larger for college graduates than for persons with one to three years of college, but lower for college graduates than for high school graduates.)(21) Conversely, less educated workers, who in 1976 believed that their comparative disadvantage in the labor market was substantial, realize by 1978 that the labor market for the highly educated is suffering and that their own lower schooling levels will not have as large a negative impact on earnings as they had previously believed.

On the whole, women are slightly more likely than men to raise their income expectations over the two years; like low ability and less educated youths, women initially may have little labor market information. However, the only ability/education group that exhibits a large

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(21) Bureau of the Census, Money Income in 1975, table 6, pp. 21-22, and Money Income and Poverty Status in 1978, table 9, pp. 18-19.

differential by sex is low ability individuals who have continued in school beyond high school. Less than half of the men in ths group expect higher future incomes in 1978 than in 1976, but almost 57 percent of the women have revised their expectations upward. This may reflect the effectiveness of affirmative action programs in lower level management positions, where many of this group are likely to be employed.

The tendency to revise expected earnings estimates seems to depend on marital status. Unmarried women are only slightly more likely to increase their expected income levels between 1976 and 1978 than to lower or hold their estimates constant. As for men, a larger proportion of single women in the low ability group than in the high ability group had higher earnings expectations in the second survey. Once again, the behavior of women who were married in 1978 only is puzzling. Income expectations rose significantly for low ability women in this group, but the majority of the high ability women did not raise their expectations. Finally, the income expectations of women who were married in both surveys follow no consistent pattern. The largest proportion of this group to expect higher incomes in the second survey was among the low ability, better educated women.

The first panel of Table 14 examines changes in expected real income for enrolled and not enrolled men and women. Again, more women than men revise their expectations upward. Because they are generally not as career oriented as men and do not get as much information about labor market and income opportunities when they are growing up or from guidance counselors and teachers, and also because fewer female friends,

older sisters, mothers, and so on are working and providing a source of information about employment and earnings, women tend to have less information on which to base their expectations in the earlier year and thus are more likely to change their expectations between 1976 and 1978. A factor in the general upward trend of income expectations which should be mentioned is the improvement in the national economy over the period. As times get better (the national unemployment rate fell from 8.5 percent in 1975 to 6.0 percent in 1978), individuals' expectations of future incomes are likely to rise.(22) Youths are particularly vulnerable to general economic conditions. When economic conditions are bad, many young workers, particularly women will become discouraged and withdraw from the labor force, or decide not to seek employment but to stay at home or in school. Others may enter the labor force in order to supplement the household's income during the depressed period, but be forced to accept jobs that do not pay as much as they would expect to earn if times were better. In either case, if experiences during such a period form the basis for income expectations, we would expect to see the levels rise as the economy improves.

For both men and women, the income expectations of the majority of full-time students decreased or remained the same. If many members of this group have been enrolled full time since high school, they do not have much direct labor market experience and therefore no first-hand knowledge of what earnings are in different occupations. Thus, one would not expect their income estimates to change substantially in two

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(22) U.S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States: 1979 100th edition (Washington, D.C.: Government Printing Office, 1979).

years. However, they may be aware of the declining value of higher education in the labor market. Consequently, those individuals who do revise their expectations would be more likely to lower than to raise their estimates.

The observed changes for nonenrolled youths and part-time students are fairly close, with more than half of both groups increasing their expectations over time. Their original estimates were at least partially based on their early labor market experiences, which were generally in low paid, entry level positions. By 1978, they may have improved their current positions and become more optimistic about the future.

Those factors which influence income expectations would also be expected to affect educational aspirations, since to a large extent, educational level determines occupational employment and earnings. In 1978, ten percent of the sample did not plan to attain more than a high school education, about 20 percent expected to receive vocational training, eight percent expected to attend less than four years of an academic postsecondary program, 23 percent planned to receive a bachelor's degree, and almost 40 percent expected to receive an advanced degree at some time in their lives. In the second panel of Table 14, we can observe the proportions of respondents who decreased, increased, and did not change their expected educational attainment between 1976 and 1978. Almost half did not change their expected schooling level and 40 percent had higher goals in the later year. The smallest group revised their schooling goals downward. This general pattern holds for men and women and across enrollment groups, but the magnitudes in each category vary.

Changes in educational aspirations appear to differ more by sex than changes in income expectations do. More women than men have increased their aspirations, and fewer have revised their goals downward. Because of changing attitudes and legislative initiatives on the equal-employment-opportunity front, the range of options open to women is increasing for those who receive the necessary training. As these young women gain more and better labor market information, they become more aware of employment opportunities and have a stronger incentive to invest in schooling. Increasing educational aspirations help to explain the tendency for women to raise their income expectations. In addition, as was discussed with reference to some of the earlier tables, the expected labor force participation of certain groups of women (for example, those who have been married for several years) is increasing over time. The types of positions desired by many of these women (as we observed, they were increasingly likely to choose managerial or professional jobs as permanent occupations) often require further investments in education (particularly when schooling years were cut short because of marriage).

Among women, the tendency to increase educational aspirations does not vary significantly across enrollment groups. Students are slightly more likely to have higher expectations in 1978 than in 1976, while individuals who are not enrolled are more apt to decrease their expected level of educational attainment. Very few of the full-time students in 1978 have decreased their educational goals. These results show a basic consistency between future plans and present actions.

The same general patterns are observed for men, although the differences between the enrollment groups are slightly larger. The most striking relationship is that more than 20 percent of nonenrolled men have revised their expected educational attainment downward. As these men gain labor market experience, they may see that many desirable job opportunities are available which do not require further formal schooling. In addition, because of the relatively depressed market for the highly educated, they may decide that they will be better off in the long run if they remain in the labor market, gaining job experience and possibly receiving on-the-job training, rather than taking time off to attend school. Considering the state of the highly educated labor market, individuals who are remaining in school and increasing their educational goals over time may be doing so because their foregone earnings are not extremely high, and some may be subsidized or even paid to attend school (as discussed earlier). It is also possible that this group's career goals are fairly rigid and well-defined, and that the fields which they desire to enter require high schooling levels.

Ability is another factor related to the level of educational aspirations. The percentages of ability, schooling level, and sex groups who have charged their educational aspirations between 1976 and 1978 are displayed in Table 15. Low ability youths (who were also more likely to raise their occupational goals and income expectations) show a greater tendency to increase their educational aspirations. Again, this can be explained as the result of increasing labor market information. In addition, it is conceivable that many of the low ability respondents were unsuccessful in school when they were younger, and at that time

Table 15. CHANGE IN EDUCATIONAL ASPIRATIONS BETWEEN 1976 AND 1978, BY ABILITY, SCHOOLING LEVEL, AND SEX

Characteristics	Number	Change in educational aspirations, 1976 to 1978		
		Decreased (%)	No change (%)	Increased (%)
TOTAL	2,864	13.7	45.7	40.6
High ability[1]	1,635	13.4	48.0	38.6
More than high school	1,400	12.4	48.8	38.8
Men	631	16.5	49.1	34.4
Women	769	9.1	48.5	42.4
High school graduate or less	235	19.2	43.4	37.4
Men	91	17.6	44.0	38.4
Women	144	20.1	43.1	36.8
Low ability[1]	1,229	14.1	42.6	43.3
More than high school	728	11.8	40.9	47.3
Men	325	14.2	41.2	44.6
Women	403	9.9	40.7	49.4
High school graduate or less	501	17.4	45.1	37.5
Men	209	17.2	42.1	40.7
Women	292	17.5	47.2	35.3

[1]See definitions of ability groups in Appendix A.

perceived that the benefits of further education did not exceed the costs. With more information and experience, they may see a higher value to these investments in terms of future employment opportunities or earnings, or they may have more information about potential financial aid that would lower the costs of attending. Individuals with more education are more likely than the high school or less group to have increased their expected schooling level, particularly among low ability youths.

The patterns of change in educational aspirations for men and women depend on the number of years of school completed. For persons with more than high school, women are more likely than men to increase their educational goals and less likely to decrease their goals. Better educated women are becoming increasingly convinced, because of the employment opportunities they face, that higher education is necessary, while men are beginning to realize that they can get good jobs with their expected levels of schooling. The reverse is true for less educated youths--here, more women than men have decreased and fewer have increased their expected educational attainment. Less educated women are more likely to be married at this age and to decide to leave or never return to school.

Parents' contributions to schooling payments were seen to be a significant factor in financing higher education, and family background was shown to be closely related to young people's occupational goals. Parents' income was therefore expected to represent an important constraint on college attendance and aspirations. However, in Table 16, changes in

Table 16. CHANGE IN EDUCATIONAL ASPIRATIONS BETWEEN 1976 AND 1978, BY PARENTS' INCOME AND SEX

		Change in educational aspirations, 1976 to 1978		
	Number	Decreased (%)	No Change (%)	Increased (%)
TOTAL	2,794	14.0	46.0	40.0
High parents' income[1]	1,538	14.6	46.9	38.5
Men	690	17.4	47.2	35.4
Women	848	12.3	46.6	41.1
Low parents' income[1]	1,256	13.4	44.9	41.7
Men	565	15.8	43.0	41.2
Women	691	11.4	46.5	42.1

[1]See definitions of parents' income groups in Appendix A.

educational aspirations do not seem to vary substantially with parents' income level. This may reflect the fact that income constraints influence initial decisions only.

Persons from lower socioeconomic backgrounds probably have less labor market information when they are younger, and therefore might be more likely to revise their educational goals several years out of high school. Individuals with more prosperous parents often automatically assume that they will earn a college degree; intervening experiences would be more likely to discourage this group than those who are less well-off. These relationships are observed in this sample, but the differences are not as large as expected.

A further explanation of the slightly higher tendency for youths from low income families to raise their educational goals might be that the financial barriers to further education which they perceived in 1976 may have diminished. In 1978, these youths have more information and have better access to loan and scholarship programs. The new programs, for which more youths can qualify, may help to offset the problem of limited resources. In addition, many of these youths have been working for some time, and they may have been able to save enough money to enable them to go farther in school.

As was discussed above, women are slightly more likely than men to revise their educational goals upward and slightly less likely to revise them downward. However, the differences between sex groups are not very large and do not vary significantly by parents' income class.

0.6 FAMILY EFFECTS IN LIFE CYCLE DECISIONS

Youths' decisions about schooling and work, as well as decisions about marriage and childbearing, are influenced by their family backgrounds and by the choices of other family members. These family effects are particularly important for women, and a primary objective of this study is to analyze the factors underlying the educational goals, expected long-term labor market association, and fertility expectations of young women. The tables in this section examine the impact of spouse's income on women's education, work, and fertility plans; the effect of the labor force participation of women's mothers on these decisions; and the interaction between fertility plans and womens decisions about allocating their time between home and the marketplace.

For those respondents who were married in the fall of 1978 (about one-third of the total sample), Table 17 shows the proportional distribution of their spouses across age and income classes. As might be expected, women tend to marry older men. The respondents themselves are probably age 21-22 at the time of the second survey—certainly within the 20 to 23 age bracket. The majority of women's spouses were age 24 and over in November 1978, while only .1 percent of the women were married to significantly younger men. In contrast, most of the male respondents have married women their own age or younger, very few (about 12 percent) were wed to older women.

Because women's spouses are older and have accumulated more work experience and training, their earnings tend to be higher. More than 90 percent of the men's spouses have low incomes, while women's spouses are

Table 17. PERCENTAGE DISTRIBUTIONS OF SPOUSE'S AGE AND INCOME, FOR MARRIED RESPONDENTS, 1978

	MEN	WOMEN
Spouse's Age		
Under 20	11.6	.1
20-23	76.2	43.0
24 and over	12.2	56.9
Spouse's Income[1]		
High	7.9	42.7
Low	92.1	57.3

[1]See definitions of spouse's income groups in Appendix A.

more evenly divided between income classes, although the the majority are low income. The dividing line between the high and low spouse income levels is the median annual income for families headed by individuals age 14-24. This sample seems to be more likely than the general population to attend college: by 1976, 72 percent of the respondents had enrolled in a school or training program after graduation from high school, and the majority of these had attended academic colleges; nationally, less than 26 percent of 1975 white high school graduates age 20 to 24 had enrolled in college.(23) Therefore, it is not surprising that their incomes tend to be low rather than high. Furthermore, because the benchmark used is median income for families rather than for persons, the majority of the spouses are likely to be in the low income group under any circumstances.

In addition to the fact that women's spouses are realizing the returns to their higher investments in human capital, the income differential between men's and women's spouses may be explained by differences in labor supply—while many of the men's spouses are part-time homemakers or students, the women's spouses are most likely to work full time. Further, simply because men tend to earn more than women, even if all spouses were working full time, a higher proportion of the male respondents' spouses would have low incomes.

Household decisions about work reflect the opportunities available to family members, including their potential earnings in the labor market and their comparative advantages in nonmarket activities.

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(23) Bureau of the Census, Statistical Abstract of the United States: 1978, table 259, p. 160.

Frequently, therefore, the husband will work, because his wages are higher, while the wife will stay home and raise the children. For women, children and work are to a large extent substitutes; for men, they are more likely to be complements, because men must work more to support a larger family, especially if their wives are not employed. Although only about 16 percent of the total sample had any children in November 1978, almost half of the married respondents had already had children.

The household's labor force participation decisions will be reflected in the educational attainment of the respondents and their spouses. For male and female respondents grouped by schooling level and educational aspirations, Table 18 provides percentage distributions of spouses across educational educational attainment categories. Comparing men and women, it is apparent that women's spouses tend to be more highly educated. Proportionately fewer women's spouses are at the lower end of the attainment distribution (high school or less), while the proportions completing a four-year degree are significantly higher. This is true regardless of the respondent's own schooling level or goals.

Part of the reason for this difference is the disparity in age between women's and men's spouses, which is discussed above. Because the female respondents' husbands are in general older than the male respondents' wives, they naturally have been able to go farther in school by the time of the second survey. More important is the fact that husbands are more likely than wives to spend most of their future lives in the labor force, and therefore have a much greater incentive to make the investments in training.

Table 18. PERCENTAGE DISTRIBUTION OF RESPONDENTS' SPOUSES ACROSS SCHOOLING LEVELS, BY RESPONDENTS' EDUCATIONAL ATTAINMENT AND EDUCATIONAL ASPIRATIONS, 1978

Respondent Characteristics	Number	Educational attainment of spouse: High school or less	Noncollegiate post-secondary training	Some college	At least B.A.
MEN					
Educational attainment:					
High school or less	151	68.9	12.6	15.9	2.6
Noncollegiate postsecondary training	87	47.1	12.7	33.3	6.9
Some college	68	36.8	10.3	38.2	14.7
At least B.A.	54	14.8	3.7	37.1	44.4
Educational aspirations:					
High school or less	60	71.7	13.3	13.3	1.7
Noncollegiate postsecondary training	113	59.3	12.4	23.0	5.3
Some college	36	55.6	8.3	33.3	2.8
B.A.	79	36.7	8.9	40.5	13.9
Advanced degree	73	30.1	5.5	31.5	32.9
WOMEN					
Educational attainment:					
High school or less	284	63.7	9.2	20.8	6.3
Noncollegiate postsecondary training	132	37.9	16.7	31.0	14.4
Some college	123	15.5	7.3	46.3	30.9
At least B.A.	103	6.8	0.0	31.1	62.1
Educational aspirations:					
High school or less	135	73.3	3.7	16.3	6.7
Noncollegiate postsecondary training	175	48.6	18.3	26.8	6.3
Some college	71	43.7	7.0	32.4	16.9
B.A.	137	19.7	5.9	37.2	37.2
Advanced degree	120	9.2	5.0	37.5	48.3

Another factor operating here might be that individuals tend to marry persons with similar educational backgrounds.(24) Examining the distribution of the respondents themselves by schooling level, we observe that women are slightly more likely than men to have attended any college and to have received a bachelor's degree. (The causes of this relationship are discussed in the context of some of the earlier tables.) Similarly, more women's spouses than men's spouses have a college education. The distribution of respondents across education aspirations groups, however, indicates that men's expected levels of education are slightly higher than women's, so in the long run this argument may not hold.

For both men and women, the higher the respondents' own attainment and aspirations, the higher the spouses' schooling level. This is particularly noticable at the extremes of the spectrum. Among respondents who have completed or expect to complete some noncollegiate postsecondary training, between 12 and 18 percent of spouses have attained the same schooling level (as might be expected, the proportions are higher for women's spouses), and most of the rest have high school diplomas or less (although the proportions of these respondents' spouses attending college are highest for the women in the sample). This positive correlation between the schooling levels of respondents and their spouses can be explained, in part, by the influence that married couples have on each other. This would include providing resources for education as

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(24) See Gary S. Becker, "A Theory of Marriage: Part I," Journal of Political Economy (July/August 1973), pp. 813-46, for a discussion of this point.

well as providing information about schooling, financial aid, jobs, and so on.

The patterns of spouses' schooling level look very similar by attainment and by aspirations. However, because the respondents' aspirations are higher than their current attainment (for example, 34 percent of the men have attended at least some college, but 52 percent aspire to this level or higher; the comparable figures for women are 35 percent and 51 percent), the distributions of spouses' education seem to be scaled downward when aspirations are examined. The categories are not strictly comparable: where the highest current level is "At least B.A.", the aspirations grouping includes "B.A." and "advanced degree". About one-fifth of the respondents (slightly more men than women) expect to eventually receive an advanced degree. Fewer than ten percent of the sample had attended a graduate or advanced professional program by the fall of 1978.

In addition to one's spouse, other family members influence an individual's schooling, career, and personal decisions and goals, particularly at early stages of the life cycle. We expect to observe a strong relationship between mothers' experiences and daughters' expectations. In Table 19, which compares the work status of the mothers of the female respondents with the respondents' own expected labor force attachment and educational aspirations, our expectations are confirmed.

In general, respondents were most likely to expect to be strongly attached to the labor force if their mothers had usually worked when they were growing up, less likely to be strongly attached if their mothers had worked only intermittently until they were 18 years old, and

Table 19. MOTHER'S WORK STATUS, UNTIL RESPONDENT WAS 18 YEARS OLD, BY 1978 LABOR FORCE PARTICIPATION PLANS AND EDUCATIONAL ASPIRATIONS, WOMEN

Respondent Characteristics	Number	Until respondent was 18, mother worked: Usually Full time	Usually Part time	Some of the time Full time	Some of the time Part time	Never or rarely
TOTAL NUMBER	1,416	332	40	230	127	687
TOTAL PERCENT		100.0	100.0	100.0	100.0	100.0
Strong expected labor force attachment	576	50.9	32.5	46.1	40.9	34.3
Educational aspirations:						
High school or less	34	3.3	2.5	2.6	.8	2.2
Some college or noncollegiate postsecondary training	137	13.0	7.5	10.4	13.3	7.3
B.A.	117	8.1	12.5	7.4	7.9	8.4
Advanced degree	288	26.5	10.0	25.7	18.9	16.4
Weak expected labor force attachment	840	49.1	67.5	53.9	59.1	65.7
Educational aspirations:						
High school or less	124	6.6	10.0	5.7	7.9	10.9
Some college or noncollegiate postsecondary training	265	18.7	22.5	19.5	14.2	19.1
B.A.	202	10.5	12.5	13.9	15.7	16.0
Advanced degree	249	13.3	22.5	14.8	21.3	19.7

least likely to plan to work full time if their mothers did not work when they were young. Part of the reason for this result is that mothers serve as role models for their daughters. Working mothers expose young women to labor market opportunities and provide information about jobs. A further factor might be that women who were brought up in households where the mothers supplemented family income enjoyed certain advantages. As shown in Table 23, Appendix B, proportionately more of the respondents whose mothers never worked came from low income families, while the proportion of high income families was greatest among respondents whose mothers usually worked. High family incomes due to working mothers can contribute in three ways to the strength of expected labor force attachment: first, by leading them to accept the role of a working mother; second, by providing further financial support for higher education; and lastly, by making them accustomed to a higher-income lifestyle.

Whether their mothers worked full time or part time also seems to affect the respondents' expectations. For example, while 46 percent of the respondents whose mothers worked some of the time, but generally at full-time jobs, exhibit a strong commitment to the labor force, only 41 percent of those whose mothers worked some of the time, but generally at part-time jobs, plan to be strongly attached. The pattern is disurbed by the apparently very weak attachment of women whose mothers usually worked at part-time jobs, but this is a very small group (40 respondents) and the results are therefore questionable.

Almost half of the mothers had never or rarely been employed when their daughters were young. The other work status groups each account for about one quarter of the mothers, with full-time jobs more common than part-time positions.(25) Similarly, almost 60 percent of the female respondents expect to be weakly attached to the labor force. However, the 40 percent that plans on working full time for most of the next two decades represents an increase over the labor force commitment exhibited by their mothers. This is consistent with the secular trend in the labor force participation rates of women, particularly married women.

The educational aspirations of the respondents depend heavily on their work plans. Only six percent of the women who expect to be strongly attached to the labor force do not plan to attend any postsecondary school, and half of this group intend to receive advanced degrees. Among the women with weak expected labor force attachment, 15 percent anticipate receiving no further schooling after high school and less than 30 percent expect advanced degrees. Obviously, these young women view education, at least in part, as an investment made for career advancement. The longer they plan to spend in the work force collecting the benefits, the more likely they are to invest. This strong positive relationship between work plans and educational aspirations exists for each mother's work status group. This table does not contain sufficient information to identify any other determinants of women's educational aspirations, or to ascertain whether mother's work status has an independent, direct effect on educational aspirations.

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(25) It is important to note that the definitions of "usually" and "some of the time" depend on the individual respondents. Therefore, distinctions between the work status groups can not be strictly drawn.

Other factors that might be expected to affect women's schooling and work plans include marital status and spouse's income. In the second panel of Table 20, the relationships between these factors and educational aspirations are explored. Parents' income and local labor market conditions were originally included in this table as explanatory variables; however, their effects were not readily apparent.

As we have observed above, young women are more likely to increase than to decrease their educational aspirations over time. More than 40 percent of the female respondents reported higher educational expectations in 1978 than in 1976, while only 12 percent revised their expectations downward. Single women were most likely to raise their aspirations; this group is also most likely to be in the labor force continuously and therefore to be able to benefit from educational investments. The highest proportion of any marital status group to decrease their educational aspirations was the 16.5 percent of the women who were married in 1978 only. As stated earlier, marriage affects the amount, timing, and nature of investments in education, because married women often decide to leave the labor force either temporarily or permanently and therefore have less of an incentive to devote time and money (including foregone earnings, as well as payments for educational costs) to schooling. Recently married women, who are probably revising their future plans, are most likely to alter their educational goals.

For both groups of married women, spouse's income seems to affect schooling plans. The majority of women whose husbands earn high wages did not change their educational goals between 1976 and 1978. The wives

Table 20. CHANGES IN FERTILITY, EDUCATION, AND LABOR FORCE PARTICIPATION PLANS OF WOMEN BETWEEN 1976 AND 1978, BY MARITAL STATUS AND SPOUSES' INCOME

Characteristics	Change in fertility plans, 1976 to 1978			Change in educational aspirations, 1976 to 1978			Percent with strong expected labor force attachment	
	Decreased (%)	No change (%)	Increased (%)	Decreased (%)	No change (%)	Increased (%)	1976	1978
TOTAL	27.5	54.6	17.9	11.7	46.6	41.7	40.6	40.6
Married, both surveys	26.1	58.5	15.4	13.6	48.3	38.1	29.6	30.4
High spouse's income[1]	18.4	65.4	16.2	12.5	53.9	33.6	27.8	23.8
Low spouse's income[1]	32.4	52.9	14.7	14.4	44.0	41.6	31.0	35.3
Married, 1978 only	27.8	56.3	15.9	16.5	44.8	38.7	32.5	23.3
High spouse's income[1]	25.8	54.7	19.5	13.9	50.0	36.1	25.4	19.4
Low spouse's income[1]	29.3	57.4	13.3	18.3	41.1	40.6	37.5	26.1
Not married, 1978	27.8	52.9	19.3	9.8	46.6	43.6	45.4	48.8

[1]See definitions of spouse's income groups in Appendix A.

of men with lower incomes were more likely both to increase and to decrease their expected schooling attainment. Because their husbands' earnings are low, many of these women probably plan to work to supplement family income. Some of them have probably chosen to forego further education in order to stay in the labor market and continue to earn money, while others have decided that they will earn more if they get more training than they had previously planned on.

It is most illuminating to examine the changes in schooling plans in conjunction with the strength of the young women's expected labor force attachment, shown in the third panel of Table 20 for 1976 and 1978. Although the overall level did not change between the two surveys, the relative attachment of the various groups has altered. Single women expect to be most strongly attached in both years--almost half of the unmarried women plan to work full time for most of the next 20 years, a significantly higher proportion than for either of the other groups. Consistent with their relative tendency to raise their educational goals, the expected work attachment of unmarried women has increased over time.

In both years, married women with more prosperous spouses are least likely to expect to be working full time as they grow older. Regardless of marital status group, the planned attachment of these women fell during the two-year interval. All other things being equal, it might be expected that among households with high spouse income, fewer women will be in the labor force. Women in these families have less of an economic need to work. Further, the relatively high market wage earned by their

husbands would encourage more participation from the men in these families and less from the women, whose comparative advantage is clearly in the home. With the general improvement in economic conditions over the period, in addition to the aging and increased experience of the spouses, it would not be surprising if the incomes of these young husbands rose between 1976 and 1978, providing more encouragement to their wives to plan not to work. Married women with high income spouses were also least likely to increase their educational goals.

The expected labor force attachment of married women with low income spouses is noticably higher. It is interesting that the 1976 work plans of women who were not married until 1978 seem to correspond to spouse income level. Many of these women may have already planned their marriages at the time of the first survey. Thus, their expectations for the future would be based on factors such as their fiances' incomes. Between 1976 and 1978, as these women were married, their overall level of expected labor force attachment fell almost ten percentage points, with both spouse income groups experiencing a decline. The effect of the change in marital status (as we observed earlier, marriage seems to be an immediate deterrent to schooling and work plans, but this effect wears off over time as young women become accustomed to their family responsibilities and more open to other influences) outweighed other factors that would tend to cause a rise in expected labor force attachment. In contrast, the expected attachment of women with less prosperous spouses who had been married throughout the period increased between 1976 and 1978. In 1976, the relatively poor state of the economy may have discouraged many women from planning to work, but as condi-

tions improved and the opportunities available to women increased, their plans changed. In addition, as they grow older and have been married longer, more women in this marital status group are having or planning to have children. (In 1976, less than seven percent of the sample had children, compared with more than 16 percent by the second survey.) Particularly among low income families, the financial needs of a growing family might encourage women to plan to work more continuously. As is mentioned above, more than 40 percent of married women with low income spouses revised their educational goals upward, which also indicates that they expect to spend more time in the labor force in the future.

Women's labor force participation plans are closely related to their fertility decisions. The general trend in this country throughout the last several decades has been toward smaller families and later childbearing. The average family size declined from 3.54 individuals in 1950 to 3.42 in 1975 and 3.37 in 1977. For women age 20 to 24, the number of births per 1,000 women fell from almost 200 in 1950 to about 115 in 1975 (a 42 percent drop), compared with a 34 percent decrease for women age 25 to 29, from 166 in 1950 to 110 in 1975. The median age of women at the birth of their first child rose from 21.8 in 1960 to 22.4 in 1975. At the same time, the female labor force participation rate rose from about 31 percent in 1950 to 44 percent in 1975 and almost 48 percent in 1977; the increase has been even more rapid for married women.(26) Whether because women are delaying motherhood in order to

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(26) Bureau of the Census, Statistical Abstract of the United States: 1978, pp. 43, 60, and 348; U.S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States: 1968, 89th edition (Washington, D.C.: Government Printing Office, 1968), p. 224; and U.S. Department of Health, Education, and Welfare,

spend longer in the labor force when they are young, to get their careers started, or because they are having fewer children in total, the effect on labor force participation rates is the same.

In 1978, although only 16 percent of the respondents already had children, more than 90 percent of the sample expressed a desire to eventually have children; more than half of these prospective parents planned on having two children. About two-thirds of those who wanted children in 1978 expected to have their first or next child within the next five years. We would expect changes in the fertility plans of the young women in this sample to be reflected in changes in their educational goals and in the strength of their expected labor force attachment.

According to the first panel of Table 20, almost 55 percent of the women did not alter their fertility plans between 1976 and 1978. Of those whose plans did change, the majority expected fewer children in the later year, which is consistent with the declining average family size in the nation as a whole. This pattern holds true for all marital status and spouse income groups. The highest proportion of any marital status group who did not change their plans was of women who were married before the 1976 survey. These women and their husbands were more likely to have made their fertility decisions by the time of the first survey.

National Center for Health Statistics, Vital Statistics of the United States: 1975, vol. 1 (Washington, D.C.: Government Printing Office, 1978), table 1-11.

Spouse income seems to have a stronger influence than marital status on changes in fertility plans. The low spouse income groups were more likely to decrease and less likely to increase their fertility plans than the women with wealthier spouses. Lower family income would make it more difficult to afford to raise children, as well as more difficult for the wife to spend time out of the labor force. As we have seen, married women with low income spouses have higher expected labor force participation rates and were more likely than other married women to increase both their expected labor force attachment and their educational goals. Women who plan to work even with children have either a strong economic need to work or a higher than average commitment to the labor force. When her husband has a high income, a woman can more easly stay out of the labor force for some time and is also more able to afford childcare.

As is discussed above, the relationship between expected fertility and expected labor force attachment is generally negative for women. We would expect to observe the reverse for men: the larger the number of dependents, the more it costs to support the family, and therefore the more the family breadwinner must work. However, Table 21 does not offer support for this hypothesis. For women, expected labor force attachment does have a substantial effect on changes in fertility plans. Women who are more committed to their work are more likely to decide to have fewer children, probably because they want to minimize the disruptions to their careers. Because women with strong expected labor force attachment are most likely to have revised their educational and career goals upward, they will have less time to devote to their children.

Table 21. CHANGE IN FERTILITY PLANS BETWEEN 1976 AND 1978, BY SEX AND 1978 LABOR FORCE PARTICIPATION PLANS

Characteristics	Number	Change in fertility plans, 1976 to 1978		
		Decreased (%)	No change (%)	Increased (%)
TOTAL	3,011	27.0	53.9	19.1
Men	1,329	26.1	53.4	20.5
Strong expected labor force attachment	1,219	26.1	53.6	20.3
Weak expected labor force attachment	110	26.4	51.8	21.8
Women	1,682	27.7	54.3	18.0
Strong expected labor force attachment	682	31.1	54.1	14.8
Weak expected labor force attachment	1,000	25.4	54.4	20.2

However, changes in men's fertility plans are not significantly affected by expected labor force attachment. In fact, men who are less committed to their work are slightly more likely than strongly committed men to have increased their fertility plans. We observed earlier that fewer high ability and highly educated men expected to be strongly attached to the labor force in 1978 than in 1976. Perhaps these individuals, who have higher incomes and therefore can meet the financial needs of their families with fewer hours of work, are more willing to have larger families. If husbands and wives tend to have similar backgrounds and tastes, these men's wives might be more likely to be working, and therefore they can afford to have more children. Further, it might be that men who are less committed to the labor force are more willing to share childcare responsibilities with their wives, and therefore more likely to increase their fertility plans. Again, the definition of strongly attached is imperfect, because men who plan on further education may be counted as having weak commitments to their careers.

0.7 SUGGESTIONS FOR FUTURE RESEARCH

The main contributions of this study are the provision of a unique longitudinal data base and the illumination of key issues in the career formation process. This analysis does not fully exploit the special features of the available information, nor does it represent an attempt to provide definitive answers to policy questions.(27) The purpose of this section of the report is to briefly outline some of the avenues of future research suggested by the foregoing analysis and made possible by the type of data that we have collected.

The preceding discussion of the tables underscores the importance of considering career formation as a continuous sequential process which, for women especially, is closely interrelated with other life cycle choices and plans. Conventional human capital models that assume a continuous, full-time association with the labor market are not appropriate for examining the decisions of a large number of individuals. Models that assume educational attainment (years of schooling) is a one time choice made at high school graduation are also inappropriate for explaining the behavior of many individuals. Career formation is a process of change and modification, where individuals incorporate new information, revise their expectations, and make tradeoffs between work in the labor force and family commitments. It is important to take a long-run view of this process, and also to identify subgroups that respond differently to various factors, rather than aggregating individuals so that generality is achieved at the expense of the predictive power of

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(27) Because of delays in conducting the survey and costs that were larger than anticipated, time and financial constraints ruled out this possibility.

the model.

One research strategy that is likely to be fruitful is to model the interrelationships of marriage, expected fertility, and expected labor supply with education and work choices.(28) In this model, each of these factors (education, work, marriage, expected fertility, and expected labor supply) would be jointly determined, and one could assess the direct and indirect effects on these endogenous variables of selected exogenous factors. For example, number of siblings might have a direct impact on schooling because siblings represent additional demands on family finances, but it also might have an indirect impact on schooling through influencing fertility plans, which in turn influence expected labor force participation and thus schooling. To our knowledge, the IDES-ACT data base is the only one that contains longitudinal information about lifetime labor force participation plans. This type of model could be estimated over time and could be recursive in order to capture the sequential nature of career decisions.

Other paths for future research can be seen in the area of occupational choice. As noted in the original proposal for this study, the literature in the area of occupational choice was quite meager four years ago, and the state of the art has not altered a great deal since that time. Sociologists continue to focus on occupational status, economists on income maximization. (One exception has been the increase in research into discrimination against women.) Little progress has been

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(28) As an outgrowth of this study, such a model is being developed by Adair Waldenberg and Alan Wagner for the National Center for Education Statistics.

made as far as incorporating nonpecuniary aspects of jobs into models of career choice or examining the tradeoffs between money and nonmoney characteristics of employment. Investigations of the relationship between wage differentials and differential rates of unemployment (especially seasonal unemployment) are the only recent examples of this type of research.

Two specific directions for future research are obvious: (1) a detailed examination of the money and nonmoney aspects of occupations and of the relationships of these aspects to the characteristics of individuals who choose these occupations and to the individuals' initial expectations about these occupations, and (2) an examination of changes in occupational expectations, along with associated changes in income expectations, in light of individuals' early educational and labor market experiences.(29) The data collected as part of this study lend themselves to both of these analysis paths. In the first case, data are available on background characteristics, occupational choices (first and second choices, and in some cases alternative occupations requiring less schooling), expected incomes, and the relative importance of various job attributes. For individuals currently working, there is detailed information on job satisfaction, weeks worked, wages, and so on.

A special feature of the data is the information provided by two questions (questions 13 and 81 in the second follow-up survey) that enables researchers to measure risk aversion to the income uncertainties

(29) This would also serve to change the focus of studies of schooling and career choices from analyses of ex post returns to analyses of the decision process and its reliance on expectations and perceptions.

associated with various jobs. Risk aversion is likely to be an important determinant of individuals' educational attainments and occupational choices. Of those young people who answered these survey questions with internally consistent responses, 48 percent were very risk averse (that is, they always preferred the riskless guaranteed income to the risky alternative).(30) Forty-three percent of those who chose a managerial or professional career as their first choice job were in this most risk averse group, compared with fifty-five percent of those choosing nonmanagerial and professional jobs. Similarly, individuals who expected lower levels of educational attainment were more likely to be risk averse than those who planned to go on to college or to receive advanced degrees; married respondents of both sexes were more likely than single respondents to be risk averse. These data will facilitate the incorporation of risk aversion, as well as other personal characteristics, in analyses of educational and occupational choices.

The second line of research, which explores the adaptation of career expectations and perceptions over time, is also well suited to using the IDES-ACT data. Data on first and second choice career paths and associated income expectations for 1976 and 1978 could be used in conjunction with information on the respondents' feelings about selected job attributes and on intervening schooling and labor market experiences. Thus, one could identify the relative importance of initial

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(30) Internal consistency was established when an individual (1) never chose a risky alternative with a mean of X and variance of Y in response to one question and then later preferred the safe alternative to a risky alternative of mean X and variance less than Y, and (2) never chose the risky alternative with the lowest mean (lower than the safe alternative) and least variance (question 13c), but chose the riskless alternative in another question.

background factors and recent experiences in the career formation process.

There is much research yet to be done in this field. The data are now available, and prelinimary indications are that they will support a substantial amount of innovative research. This report represents the first step in this direction.

Appendix A
Variable Definitions

The variables contained in the tables are listed below in alphabetical order. Following each variable name is a brief description of how the variable was created. The particular questions involved, in both surveys, are also indicated.

Ability. The base year survey conducted in 1973 by the American College Testing Program included a battery of achievement tests. The scores on the numerical and reading tests are used here. When the sum of a respondent's scores is less than the sum of the median scores for the sample, the respondent is categorized as low ability; otherwise, the respondent is high ability.

Educational Aspirations. In 1978, the respondents were asked to indicate the highest schooling level that they expected to ever attain. The eight possible choices were consolidated for the tables into four or five different categories. 1979 Survey, question 4b.

Educational Aspirations, Change. Respondents were asked to mark the highest level of education that they expected to attain in their lifetimes. 1976 Survey, question 62, and 1978 Survey, question 4b. If they expected to go farther in 1978 than they had planned in 1976, it was an increase; if their expected level was lower in 1978, it was a decrease; otherwise, it was categorized as no change.

Educational Attainment. The selected levels of attainment, had some college and had some noncollegiate postsecondary training, were measured in the 1976 Survey by questions 22d, 23a, and 25a, while college completion and completion of two years of noncollegiate training were from the 1978 survey, question 4a. The more complete measures of the respondents' highest levels of current education, as well as the distinction between individuals with more than high school and those with high school diplomas or less, represent various consolidations of the answers of 1978 Survey, question 4a.

Enrollment Status. Respondents who were not enrolled in 1978 answered "no" to 1978 Survey, question 30. Among those who answered "yes", full- or part-time status was determined by the response to question 21a: respondents who did not answer question 21a (and therefore were not working) or who worked no more than 20 hours a week were considered full-time students; otherwise, part time.

Expect A B.A. In both surveys, respondents who expected to attain a four-year college degree or to go farther in school (for example, to receive a master's degree or an M.D.) were categorized as "expecting

a B.A.". The various combinations of expecting and not expecting college degrees in the two years yielded the four categories shown in the tables. 1976 Survey, question 62; 1978 Survey, question 4b.

Fertility Plans. Respondents were asked how many children they eventually expected to have. If the 1978 level was lower than the 1976 level, it was a decrease; if the 1978 level was higher, it was an increase; otherwise, it was categorized as no change. 1976 Survey, question 4a, and 1978 Survey, question 9a.

Funding Variables. The total costs of the respondents' schooling programs (1976 Survey, question 30; 1978 Survey, question 48) were compared with the total payments from all sources (1976 Survey, question 31; 1978 Survey, question 50). If costs and payments were indicated for two programs, these figures were averaged. When costs were within five percent of payments (either higher or lower) respondents were designated "reasonably funded". If costs were more than five percent higher than payments, respondents were categorized as "underfunded"; if costs were more than five percent below payments, respondents were categorized as "overfunded".

Income Expectations. Respondents were asked to estimate their earnings in their most likely jobs with ten years of experience. These estimates were adjusted for inflation between 1976 and 1978, and compared. If the expected real income in 1978 was higher than the expected real income in 1976, it was categoried as "increased"; otherwise, "no increase". 1976 Survey, question 69a; 1978 Survey, question 90a.

Informal Sources. In both surveys, respondents were asked to indicate how they first found out about their current jobs (1976 Survey, question 15c; 1978 Survey, question 28a) and schools or training programs (1976 Survey, question 25b; 1978 Survey, question 32b). Those who selected only parents, other relatives, friends, or through a previous job (for current job only) were considered to have used only informal sources.

Job Rating. For their current or most recent jobs, respondents who had worked between March 15, 1976 and November 1, 1978 were asked to rate the "job as a whole". 1978 Survey, question 25.

Labor Force Attachment. In 1976 (question 66), respondents were asked how much time during the next 20 years they planned to be working full time. Those who marked 11-15 or 16-20 years were categorized as having a "strong" expected labor force attachment; otherwise, "weak". In 1978, respondents were asked to mark those activities that they expected to be doing for at least three years when they were age 25 to 30 and age 35 to 40. When working full time was marked in both questions (85a and 85b), they were categorized as having a "strong" expected attachment; otherwise, "weak".

Labor Market. The 1975 unemployment rates for the SMSAs in which the respondents resided in 1973, at the time of the base year survey, were compared to the median SMSA unemployment rate in 1975 (9.1 percent). If the unemployment rate was less than or equal to 9.1 percent, the SMSA was a good labor market; otherwise, it was a bad labor market.

Loans. In both surveys, respondents were asked to indicate the dollar amount of support received from various loan programs for their current and most recent previous programs. The amounts from all loan sources were totaled, and if amounts were provided for two programs, these figures were averaged. 1976 Survey, question 31; 1978 Survey, question 50.

Managerial Or Professional Job. The respondents' choices of a most likely permanent job or career were gridded from the list headed "Jobs and Occupations". Positions 11-14 and 30-50 were considered managerial or professional. 1976 Survey, question 68a; 1978 Survey, question 87a. Their choices of second most likely jobs were from 1976 Survey, question 68d, and 1978 Survey, question 89. The choice with current education questions (1976 Survey, question 72a; 1978 Survey, question 92a) were asked of only those respondents whose first and second most likely occupations both required further schooling.

Marital Status. If respondents were married as of the first week of November 1978 (1978 Survey, question 5a) and were also married as of the first week of March 1976 (1976 Survey, question 3), they were categorized as "married, both surveys". If they were married in 1978 but not in 1976, they were categorized as "married, 1978 only". Otherwise, they were "not married, 1978".

Mother's Work Status. In 1978, respondents were asked whether their mothers had ever had paid work outside of the home (question 70a) and whether this work was part-time or full-time (question 70b). If they did not live with their mothers, they were not included in the table. For Table 23 (mother worked when respondent was 13 to 18), the exact responses were used. For Table 19 (mother worked until respondent was 18), the responses were averaged to obtain a composite measure of worked "usually", "some of the time", or "never or rarely", and to determine whether this work was generally full- or part-time.

Parents' Contributions. In both surveys, respondents were asked to indicate the dollar amount of support received from their parents or guardians for their current and most recent previous schooling programs. If amounts were provided for two programs, these figures were averaged. Otherwise, the exact figures supplied by respondents were used. 1976 Survey, question 31; 1978 Survey, question 50.

Parents' Education. If either the respondent's mother or father had completed at least some college (1976 Survey, question 50, answers six through nine), the category was "at least some college"; otherwise, "no college".

Parents' Income. Median family income in 1975 for families with heads age 25-44 was $14,648. Respondents who marked that their parents' annual income was under $15,000 in 1975 were put in the low parents' income group, all others were in the high parents' income group; except in Table 23, where low is under $12,000, medium is $12,000 to $19,999, and high is $20,000 and over. 1976 Survey, question 52.

Parents' Income Changes. The actual change in parents' income was determined by comparing the responses to question 52, 1976 Survey, and question 69c, 1978 Survey. If the same income bracket, or within one in either direction, was marked in 1978, it was considered "no major change". A decrease of two or more brackets was "decreased greatly", an increase of two or more was "increased greatly". The respondents' perceptions of the change in parents' income are from the 1978 Survey, question 69d.

Scholarships. In both surveys, respondents were asked to indicate the dollar amount of support received from various scholarships or grants for their current and most recent previous programs. The amounts from all scholarship sources were totaled, and if amounts were provided for two programs, these figures were averaged. 1976 Survey, question 31; 1978 Survey, question 50.

Sex. The sex of the respondent was indicated in the responses to the base-year survey in 1973.

Spouse's Age. Respondents were asked to mark the age of their current spouses at the time of the second survey. 1978 Survey, question 5d.

Spouse's Education. Respondents were asked to mark the highest level of education attained by their spouses as of November 1978. 1978 Survey, question 6h.

Spouse's Income. The median family income in 1977 for families headed by individuals age 14 to 24 was $10,376. Inflated to 1978, this becomes $11,165. Respondents were asked to write in their spouses' wage and salary income for the entire current year (1978). Incomes below the median were categorized as "low"; otherwise, "high". 1978 Survey, question 74a.

Wage And Salary Income. Income "from wages, salaries, commissions, tips and net income from farm and business". 1976 Survey, question 6; 1978 Survey, question 74a.

Weeks Worked. Respondents were asked to write in the number of weeks they had worked between November 1, 1977 and November 1, 1978. 1978 Survey, question 18a.

APPENDIX B

SUPPLEMENTARY TABLES

Table 22. RESPONDENTS' PERCEPTIONS OF CHANGE IN PARENTS' INCOME BETWEEN 1976 AND 1978, COMPARED WITH ACTUAL CHANGE

Respondent's perception of change in parents' income	Number	Actual change in parents' income, 1976 to 1978: Decreased greatly (%)	No major change (%)	Increased great (%)
TOTAL	2,890	5.7	77.1	17.2
1978 income is:				
Much lower	145	46.2	45.5	8.3
Slightly lower	315	8.2	75.9	15.9
The same	809	4.6	82.2	13.2
Slightly higher	1,417	1.7	79.9	18.4
Much higher	204	5.9	61.3	32.8

Table 23. PARENTS' INCOME, 1976, BY MOTHER'S WORK STATUS WHEN RESPONDENT WAS 13 to 18 YEARS OLD

Mother worked when respondent was 13 to 18	Parents' income, 1976[1]		
	Low	Medium	High
TOTAL	913	1,030	768
Usually	344	407	329
Full time	318	358	298
Part time	26	49	31
Some of the time	183	226	143
Full time	37	51	51
Part time	146	175	92
Never	386	397	296

[1]See definitions of parents' income groups in Appendix A.